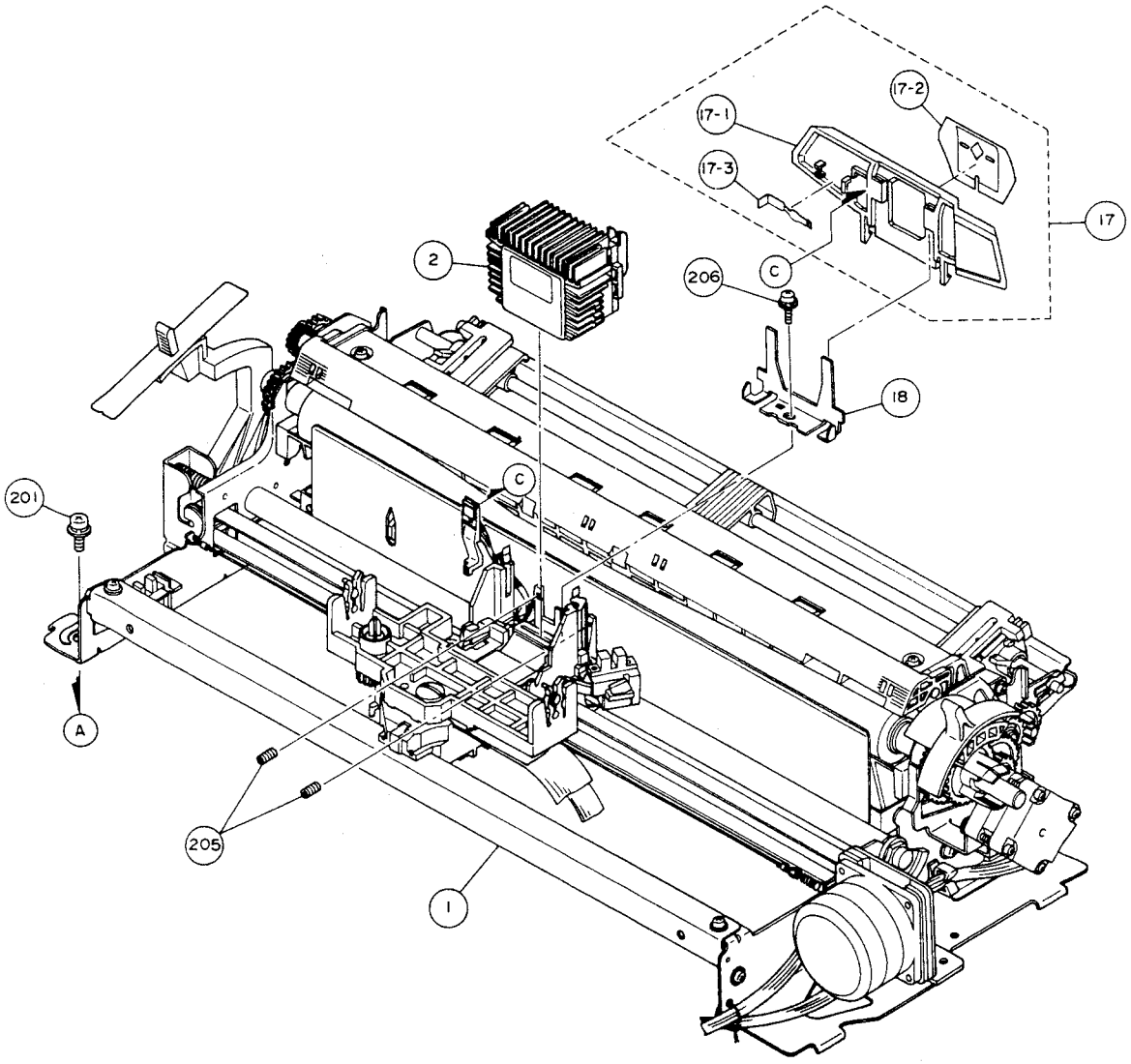


Pinwriter® P62/P72 Maintenance Guide

NEC

NEC Corporation

808-871849-606-A Rev. 00
10-92

PROPRIETARY NOTICE AND LIABILITY DISCLAIMER

The information disclosed in this document, including all designs and related materials, is the valuable property of NEC Corporation (NEC) and/or its licensors. NEC and/or its licensors, as appropriate reserve all patent, copyright and other proprietary rights to this document, including all design, manufacturing, reproduction, use and sales rights thereto, except to the extent said rights are expressly granted to others.

The NEC product (s) discussed in this document are warranted in accordance with the terms of the Warranty Statement accompanying each product. However, actual performance of each such product is dependent upon factors such as system configuration, customer data, and operator control. Since implementation by customers of each product may vary, the suitability of specific product configurations and applications must be determined by the customer and is not warranted by NEC.

To allow for design and specification improvements, the information in this document is subject to change at any time, without notice. Reproduction of this document or portions thereof without prior written approval of NEC is prohibited.

Pinwriter is a registered trademark of NEC Corporation.
IBM is a registered trademark of International Business Machines Corporation.
Centronics is a registered trademark of Genicom Corporation.
ITC Bookman and ITC Souvenir are trademarks of International Typeface Corporation.
Helvetica and Times are registered trademarks of Linotype-Hell AG and/or its subsidiaries.
Epson is registered trademark of Seiko Epson Corporation.

First Printing – October 1992

Copyright 1992
NEC Corporation

Printed in Japan

Manufacturer's Instructions and User's Responsibility to Prevent Radio Frequency Interference

Manufacturer's Instructions

The user must observe the following precautions in installing and operating this device:

1. Operate the equipment in strict accordance with the manufacturer's instructions for the model.
2. Plug the unit into a properly grounded wall outlet and use the power cord supplied with the unit, unmodified.
3. Always operate the unit with the factory-installed cover on the unit.
4. Make no modification to the equipment which would affect its meeting the specified limits of the Rules.
5. Maintain the equipment in a satisfactory state of repair.
6. Use a shielded and properly grounded I/O cable to ensure compliance of this unit to the specified limits of the rules.

User's Responsibility

The user is ultimately responsible for correcting problems that arise from harmful radio-frequency emissions from equipment under his control. If this equipment does cause interference to radio or television reception (which can be determined by turning the equipment off and on), the user is encouraged to try to correct the interference by one of the following measures. All of these responsibilities and any others not mentioned are exclusively at the expense of the user.

1. Change in orientation of the receiving device antenna.
2. Change in orientation of the equipment.
3. Change in location of equipment.
4. Change in equipment power source.

If these attempts are unsuccessful, install one or all of the following device:

1. Line isolation transformers
2. Line filters
3. Electro-magnetic shielding

If necessary, the user should consult the dealer, NEC, or an experienced radio/television technician for additional suggestions.

NOTE

The operator of a computing device may be required to stop operation his device upon finding that the device is causing harmful interference and it is in the public interest to stop operation until the interference problem has been corrected.

Contents

Page

Section 1 General Description

Hardware Description 1-2
Mother Board 1-3
Microprocessing Unit 1-3
Memory 1-3
Parallel Latch 1-3
Driver Controller 1-3
Interface 1-5
Mechanism Assembly 1-5
Print Head Assembly 1-5
Carrier Assembly 1-7
Spacing Mechanism 1-8
Home Position Sensor Assembly 1-9
Paper Feed Mechanism 1-10
Ribbon Feed Assembly 1-12
Sensor and Switch Assembly 1-14
Ribbon Sensor Assembly 1-18
Paper Detection Function 1-19
Control Panel 1-24
Power Board 1-25
PSD POWER (C) PCB 1-27
Filter Circuit 1-27
Primary Rectifying And Smoothing Circuit 1-27
Rush Current Limiting Circuit 1-27
Inverter Circuit 1-27
Secondary Rectifying And Smoothing Circuit 1-27
Series Dropper Circuit 1-27
Secondary-Side Control Circuit 1-27
Overvoltage Protection Circuit 1-27
Overcurrent Protection Circuit 1-28
PSD-C1 POWER (C) PCB 1-30
Filter Circuit 1-30
Primary Rectifying And Smoothing Circuit 1-30
Rush Current Limiting Circuit 1-30
Inverter Circuit 1-30
Secondary Rectifying And Smoothing Circuit 1-30
Series Dropper Circuit 1-30
Secondary-Side Control Circuit 1-30
Overvoltage Protection Circuit 1-30
Overcurrent Protection Circuit 1-31
Ribbon Cartridges 1-32
Black Nylon Ribbon Cartridge 1-32
Black Multistrike Film Ribbon Cartridge 1-32
Color Nylon Ribbon Cartridge 1-32
Options 1-34
Font Cards 1-34
Serial Interface OPTION 5207 1-34
Sheet Feeders 1-34

Contents (Cont'd)

	Page
Pull Tractor	1-34
Color Kit 5208	1-34
Specifications	1-39
Section 2 Setup and Check	
Unit Setup	2-1
Unpacking	2-2
Installing the Ribbon Cartridge	2-4
Installing the Sheet Guide	2-5
Connecting the Power and Interface Cables	2-6
Unit Check	2-8
Printer Self-Tests	2-8
Power-On Test	2-8
Print Head and Print Quality Check	2-9
Hex Dump	2-11
Section 3 Operation	
Control and Indicators	3-1
Status Message	3-4
Attendance Message	3-6
Menu Mode	3-7
Entering the Menu Mode	3-8
Using the Control Panel	3-8
Secret Mode	3-15
Memory Switch Descriptions	3-15
Accessing the Secret Mode	3-35
Section 4 Maintenance	
Cleaning	4-1
Adjustments	4-2
Print Head Gap Adjustment	4-2
Card Holder Adjustment	4-6
PF Sensor Adjustment	4-10
PSD Power (C) Output Voltage Adjustment	4-12
PSD Power (C) Output Power Adjustment	4-13
PSG-C1 Power Output Voltage Adjustment	4-13
PSG-C1 Power Output Power Adjustment	4-14
Lubrication	4-15
Section 5 Troubleshooting	
Error Messages	5-1
Power Board Test Points	5-7
Specific Troubleshooting Procedures	5-9
Section 6 Parts Removal and Installation	
Sheet Guide Cover Removal	6-2
Top Cover Assembly Removal	6-3
Control Panel Assembly Removal	6-4
Middle Cover Assembly Removal	6-7

Contents (Cont'd)

	Page
Print Head Assembly Removal	6-9
Feed Roller Unit Remoal	6-12
Bail Roller Guide Assembly Removal	6-14
Paper Thickness Seetting Lever Removal	6-15
Tractor Unit Removal	6-16
Tractor Assembly Removal	6-17
Hp Sensor Assembly Temoval	6-21
Sensor and Switch Assembly Removal	6-22
Card Holder Removal	6-25
Ribbon Base Removal	6-27
Carrier Cable Assembly Removal	6-28
Color Cable Removal	6-32
Platen Assembly Removal	6-33
Paper Release Arm Removal	6-35
SP Motor Assembly Removal	6-37
Driven Pulley Assembly Removal	6-40
Timing Belt Removal	6-41
LF Motor Assembly Removal	6-46
Mechanism Unit Removal	6-49
Carrier Assembly Removal	6-53
Ribbon Sensor Assembly Removal	6-56
Bottom Guide Assembly Removal	6-59
Paper Guide Removal	6-60
Mother Board PCB Assembly Removal	6-61
Connection Board Removal	6-63
Power Supply PCB Assembly Removal	6-64

Section 7 Illustrated Parts Breakdown

Optional Parts	7-1
Spare Parts	7-2
Illustrated Parts Breakdown	7-5

Figures

Figure	Title	Page
1-5	Mother Board Simplified Bloxk Diagram	1-4
1-6	Print Head Assembly	1-6
1-7	Carrier Assembly	1-7
1-8	Spacing Assembly	1-8
1-9	Home Position Switch Assembly	1-9
1-10	Paper Feed Assembly	1-10
1-11	Gear Transmission for Platen Drive	1-11
1-12	Gear Transmission for Push Tractor Drive	1-11
1-13	Ribbon Feed Assembly	1-12
1-14	Ribbon Feed Mechanism	1-13
1-15	Sensor and Switch Assembly	1-14
1-16	MDL Sensor	1-16
1-17	Print Force Sensor	1-16
1-18	Option Sensor	1-17
1-19	Paper Selection Switch	1-17
1-20	Ribbon Sensor Assembly	1-18
1-21	Carrier Return Position	1-20
1-22	Printable Right End Position	1-20
1-23	Paper Right End Detection	1-21
1-24	Paper Left End Detection	1-22
1-25	Control Panel	1-24
1-26	PSD Power (C) Circuit Diagram	1-26
1-27	PSG-C1 Power Circuit Diagram	1-29
1-28	Black Nylon Ribbon Cartridge	1-32
1-29	Black Multistrike Film Ribbon Cartridge	1-33
1-30	Color Nylon Ribbon Cartridge	1-33
1-31	Optional Cards	1-35
1-32	Serial Interface Option 5207	1-35
1-33	One-Bin Sheet Feeder 4613	1-36
1-34	Dual-Bin Sheet Feeder 4714	1-36
1-35	Pull Tractor 4719	1-37
1-36	Bottom Pull Tractor Feeding	1-37
1-37	Push-Pull Tractor Feeding	1-38
1-38	Color Ribbon Base	1-38
2-1	Printer Shipping Package	2-2
2-2	Printer and Accessories	2-3
2-3	Ribbon Cartridge	2-4
2-4	Sheet Guide Installation	2-5
2-5	Sheet Guide Position for Cut Sheets	2-5
2-6	Power Connector	2-6
2-7	Parallel Interface Connector	2-7
2-8	Serial Interface Connector	2-7
2-9	Self-Test Printout	2-10
2-10	Sample Hex Dump	2-12

Figures (Cont'd)

Figure	Title	Page
3-1	Control	3-1
3-2	Menu Tree	3-9
3-9	Switch S1 Setting	3-35
3-10	EEPROM Memory Mode Menu	3-35
4-1	Print Head Gap	4-3
4-2	Print Head Adjustment	4-4
4-3	Thickness Gauge	4-5
4-4	Gauge Insertion Angle	4-5
4-5	Adjusting Screws	4-6
4-6	Card Holder Bracket Positioning	4-7
4-7	Card Holder Bracket Location	4-7
4-8	Gap Adjustment	4-8
4-9	Card Holder Bracket Gap	4-9
4-10	Card Holder Areas	4-10
4-11	PF Sensor Adjustment	4-11
4-12	PSD Power (C) Adjustment Circuit	4-12
4-13	PSD Power (C) Adjusters	4-12
4-14	PSG-C1 Power (C) Adjustment Circuit	4-13
4-15	PSG-C1 Power (C) 313 Adjusters	4-14
4-16	Mechanical Assembly Lubrication Points	4-16
4-17	Paper Release Arm Lubrication Point	4-16
4-18	Paper Selection Lever Lubrication Points	4-17
4-19	Lubrication Point of Paper Thickness Setting Lever	4-17
4-20	Guide Shaft, Front Stay and Piece (1)	4-18
4-21	Carrier Assembly Lubrication Points	4-18
4-22	Planet Arm Lubrication Points	4-19
4-23	Ribbon Base Assembly Lubrication Point	4-19
4-24	Lubrication Point of 1 Bin Sheet Feeder-Pressure Roller	4-20
4-25	Lubrication Point of 1 Bin Sheet Feeder-Clutch Subassembly	4-21
4-26	Lubrication Point of 2 Bin Sheet Feeder-Pressure Roller	4-21
4-27	Lubrication Point of 2 Bin Sheet Feeder-Gear Teeth	4-22
5-1	Error Codes	5-3
5-2	PSD Power (C) Output Voltage Check	5-7
5-3	PSG-C1 Power Output Voltage Check	5-8
5-4	Power Lamp Does Not Light	5-10
5-5	Carrier Does Not Initialize	5-12
5-6	Control Panel Buttons Do Not Function Properly	5-14
5-7	Control Panel Lamps Do Not Function Properly	5-15
5-8	Self-Test Printout Is Abnormal	5-16
5-9	On-Line Printing Using the Serial Interface Is Abnormal	5-18
5-10	On-Line Printing Using the Parallel Interface Is Abnormal	5-20
5-11	Color Printing Is Abnormal	5-22
5-12	PSD Power (C) Is Faulty	5-24
6-1	Sheet Guide Cover	6-2
6-1	Sheet Guide Cover Pivot	6-2
6-3	Top Cover Assembly	6-3

Figures (Cont'd)

Figure	Title	Page
6-4	ROM Cover	6-4
6-5	Control Panel Cable	6-5
6-6	Control Panel Locking Tab	6-5
6-7	Control Panel Assembly Removal	6-6
6-8	Midle Cover Assembly Removal	6-7
6-9	Middle Cover Hooks (Model P62)	6-8
6-10	Sheet Guide Unlocking	6-9
6-11	Sheet Guide Removal	6-10
6-12	Bail Roller Guide	6-10
6-13	Clamp Lever Release	6-11
6-14	Print Head Removal	6-11
6-15	Bail Roller Guide	6-12
6-16	Feed Roller Unit	6-13
6-17	Bail Roller Unit Removal	6-13
6-18	Bail Roller Guide Assembly	6-14
6-19	Paper Thickness Lever	6-15
6-20	Tractor Unit Mounting Screws	6-16
6-21	Tractor Gear and Tractor Bushing (RH)	6-18
6-22	Tractor Bushing (LH)	6-18
6-23	Tractor Drive Shaft	6-19
6-24	Tractor Support Shaft	6-19
6-25	Alignment Marks	6-20
6-26	HP Sensor Connector	6-21
6-27	HP Sensor	6-21
6-28	Connector CN44	6-22
6-29	PF Sensor	6-23
6-30	Option Sensor Bracket	6-23
6-31	MDL Sensor Bracket	6-24
6-32	Paper Detection Sensor Removal	6-25
6-33	Card Holder Removal	6-26
6-34	Ribbon Base Removal	6-27
6-35	Cable Holder	6-29
6-36	Carrier Cable Cover	6-29
6-37	Carrier Cable Connector	6-30
6-38	Cable Clamps	6-30
6-39	Carrier Cable Connector	6-31
6-40	Color Cable Removal	6-31
6-41	Color Cable Removal	6-32
6-42	Option Gear	6-33
6-43	Platen Bushing	6-34
6-44	Platen Assembly	6-34
6-45	LF Motor Unit	6-35
6-46	Paper Release Arm	6-36
6-47	SP Motor Cable	6-37
6-48	SP Motor Unit Screws	6-38
6-49	SP Motor Unit Removal	6-38
6-50	SP Motor Assembly	6-39
6-51	Driven Pulley Assembly	6-40

Figures (Cont'd)

Figure	Title	Page
6-52	Cable Clamps	6-42
6-53	Carrier Cable Connector	6-42
6-54	Color Cable Removal	6-43
6-55	Carrier Frame Cover	6-43
6-56	Connector Board	6-44
6-57	Belt Holder	6-44
6-58	Timing Belt Removal	6-45
6-59	Connector CN19	6-46
6-60	LF Motor Unit	6-47
6-61	Cable Clamp	6-47
6-62	LF Motor Assembly	6-48
6-63	Cable Holder	6-49
6-64	Carrier Cable Cover	6-50
6-65	Carrier Cable Connectors	6-50
6-66	Motor Connectors	6-51
6-67	Connectors CN42 and CN44	6-51
6-68	Mechanism Assembly Mounting Screws	6-52
6-69	Mechanism Assembly Removal	6-52
6-70	Electric Bushing	6-53
6-71	Guide Shaft	6-54
6-72	Ribbon Feed Wire and Front Stay Removal	6-54
6-73	Carrier Assembly Removal	6-55
6-74	Carrier Frame Cover	6-56
6-75	Carrier FG Spring (LH)	6-57
6-76	Connector Board	6-57
6-77	Ribbon Sensor Assembly	6-58
6-78	Bottom Guide Assembly	6-59
6-79	Paper Guide Assembly	6-60
6-80	Shield Cover	6-61
6-81	DC Cable Removal and Mother Board PCB Assembly Removal	6-62
6-82	Connectors CN11 and CN41	6-62
6-83	Connection Board	6-63
6-84	Power Supply PCB Assembly	6-64
7-1	Typical Codes for Attaching Hardware	7-5
7-2	Family Tree-Pinwriter P62	7-7
7-3	Family Tree-Pinwriter P72	7-21
7-4	Pinwriter P62	7-35
7-5	Pinwriter P72	7-37
7-6	Printer Unit (N)	7-39
7-7	Printer Unit (W)	7-41
7-8	Mechanism Unit (N)	7-42
7-9	Mechanism Unit (W)	7-43
7-10	Frame Unit (N)	7-45
7-11	Frame Unit (W)	7-47
7-12	Frame Assembly (N)	7-48
7-13	Frame Assembly (W)	7-49
7-14	Main Stay Assembly (N)	7-50

Figures (Cont'd)

Figure	Title	Page
7-15	Main Stay Assembly (W)	7-51
7-16	Platen Assembly (N)	7-52
7-17	Platen Assembly (W)	7-53
7-18	Carrier Assembly	7-54
7-19	Tractor Unit (N)	7-55
7-20	Tractor Unit (W)	7-56
7-21	Feed Roller Unit (N)	7-57
7-22	Feed Roller Unit (W)	7-58
7-23	Base Cover Assembly (E2 UK)	7-59
7-24	Base Cover Assembly (E3 UK)	7-60
7-25	Upper Cover Assembly (E2 UK)	7-61
7-26	Upper Cover Assembly (E3 UK)	7-62
7-27	PSG Operator Panel	7-63
7-28	Power Board, PSD POWER (C)	7-65
7-29	Power Board, PSG-C1 POWER	7-67
7-30	Mother Board, G8KNHA	7-69
7-31	Connection Board, G8ESVA	7-70
7-32	RS-232C Kit	7-71
7-33	RS-232C Interface Board, G8ESW	7-72
7-34	Tractor Unit (S)	7-73
7-35	Tractor Unit (L)	7-75
7-36	PSD Sheet Feeder (S) Single	7-77
7-37	PSD Sheet Feeder (L) Single	7-78
7-38	Main Unit S Assembly	7-79
7-39	Main Unit L Assembly	7-81
7-40	Unit Sub (S) Assembly	7-83
7-41	Unit Sub (L) Assembly	7-84
7-42	PSD Sheet Feeder (S) 2 Bin	7-86
7-43	PSD Sheet Feeder (L) 2 Bin	7-87
7-44	2 Bin Main Unit Assembly	7-89
7-45	2 Bin Main Unit Assembly	7-91
7-46	2 Bin Unit Subassembly	7-92
7-47	2 Bin Unit Subassembly	7-93
8-1	Interconnection Circuit Diagram	8-3
8-2	Connector Wiring I	8-5
8-3	Connector Wiring Diagram II	8-7
8-4	Connector Wiring Diagram III	8-9
8-5	Mother Board (G8KNHA) Circuit Diagram – 1 of 12	8-11
8-6	Mother Board (G8KNHA) Circuit Diagram – 2 of 12	8-13
8-7	Mother Board (G8KNHA) Circuit Diagram – 3 of 12	8-15
8-8	Mother Board (G8KNHA) Circuit Diagram – 4 of 12	8-17
8-9	Mother Board (G8KNHA) Circuit Diagram – 5 of 12	8-19
8-10	Mother Board (G8KNHA) Circuit Diagram – 6 of 12	8-21
8-11	Mother Board (G8KNHA) Circuit Diagram – 7 of 12	8-23
8-12	Mother Board (G8KNHA) Circuit Diagram – 8 of 12	8-25
8-13	Mother Board (G8KNHA) Circuit Diagram – 9 of 12	8-27
8-14	Mother Board (G8KNHA) Circuit Diagram – 10 of 12	8-29
8-15	Mother Board (G8KNHA) Circuit Diagram – 11 of 12	8-31

Figures (Cont'd)

Figure	Title	Page
8-16	Mother Board (G8KNHA) Circuit Diagram – 12 of 12	8-33
8-17	Connection Board (G8ESVA) Circuit Diagram	8-35
8-18	Power Board Circuit Diagram – PSD POWER (C)	8-37
8-19	Power Board Circuit Diagram – PSG-C1 POWER	8-39
8-20	Control Panel Circuit Diagram	8-41
8-21	Serial Interface Board (G8ESW) Circuit Diagram	8-43

Tables

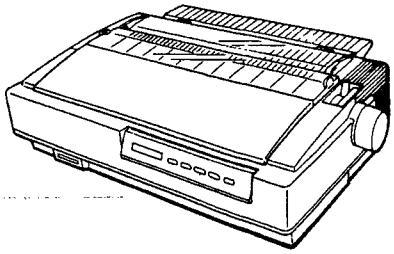
Table	Title	Page
1-1	Forms Handling Option Status	1-15
1-2	Ribbon Situation	1-18
1-3	Output Voltage Capacity	1-25
1-4	Specifications	1-39
3-1	Control Panel Summary	3-3
3-2	Status Messages	3-4
3-3	Attendance Messages	3-6
3-4	Factory Memory Switch Settings	3-13
3-5	Secret Mode Switches	3-16
3-6	Panel Language	3-22
3-7	User Selection	3-22
3-8	Parity Check	3-22
3-9	Baud Rate	3-22
3-10	Buffer Capacity of RS-232C Board	3-23
3-11	Communication Protocol	3-23
3-12	Horizontal Alignment in HS-10/-12, Draft-10/-12, 80-dpi Dot Mode	3-23
3-13	Horizontal Alignment in LQ, PS, PS-CND, HS-LQ, DR-15/-17/-20, 90-/120-/180-/240-/360-dpi Dot Mode	3-24
3-14	Horizontal Alignment for Factory Setting in Draft Mode with Fabric Black Ribbon	3-24
3-15	Horizontal Alignment for Factory Setting in LQ Mode with Fabric Black Ribbon	3-25
3-16	Horizontal Alignment for Factory Setting in Draft Mode with Fabric Color Ribbon	3-25
3-17	Horizontal Alignment for Factory Setting in LQ Mode with Fabric Color Ribbon	3-26
3-18	Horizontal Alignment for Factory Setting in Draft Mode with Multistrike Ribbon	3-26
3-19	Horizontal Alignment for Factory Setting in LQ Mode with Multistrike Ribbon	3-27
3-20	First Print Position with Cut Sheet Guide	3-27
3-21	First Print Position with Pull Tractor	3-28
3-22	First Print Position with Cut Sheet Feeder	3-28
3-23	Tear-Off Position	3-29
3-24	Type Style at Power-Up	3-29
3-25	Spacing Pitch	3-30
3-26	Languahe Character Set	3-30
3-27	Thai Character Set	3-31
3-28	Form Length	3-32
3-29	Line Spacing	3-33
3-30	Left Margin	3-33
3-31	Paper Detection	3-33
3-32	Fanfold Margin	3-34
3-33	Center Position with Cut Sheet Guide	3-34
3-34	Center Position with Pull Tractor	3-34
3-35	Buffer Capacity	3-34

Tables (Cont'd)

Table	Title	Page
4-1	Mechanism Assembly Lubrication Points	4-15
4-2	Lubrication Points for Optional Sheet Feeder	4-20
5-1	Option Board Error (BX)	5-2
5-2	Electronic Circuit Errors (EX)	5-2
5-3	Mechanical Assembly Errors (MX)	5-2
7-1	Ribbons	7-1
7-2	Paper Handling Options	7-1
7-3	Optional Kits	7-1
7-4	Font Cards	7-2
7-5	Recommended Spare Parts Kit	7-3
7-6	Typical Codes for Attaching Hardware	7-6

Section 1

General Description



The Pinwriter® P62/P72 printers are high-quality, multimode dot matrix printers. The P62 model is 80-column printers and the P72 model is 136-column printers. In high-speed mode all models print 300 characters per second (cps), in draft mode they print 250 cps, and in letter-quality mode they print 83 cps.

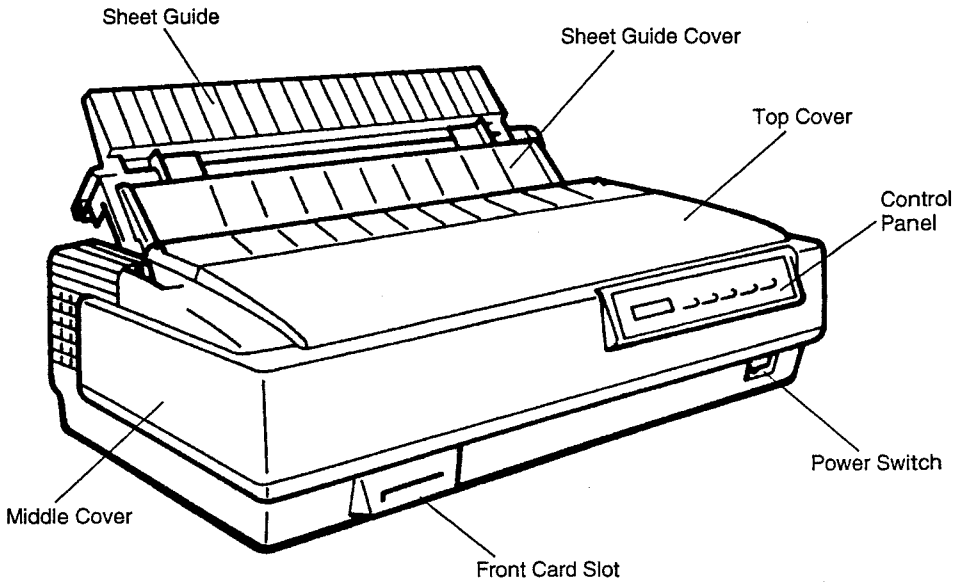


Figure 1-1 Front View

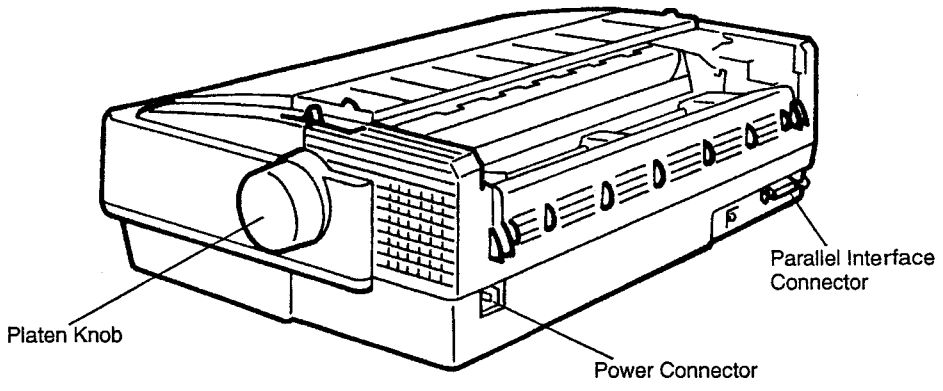


Figure 1-2 Rear View

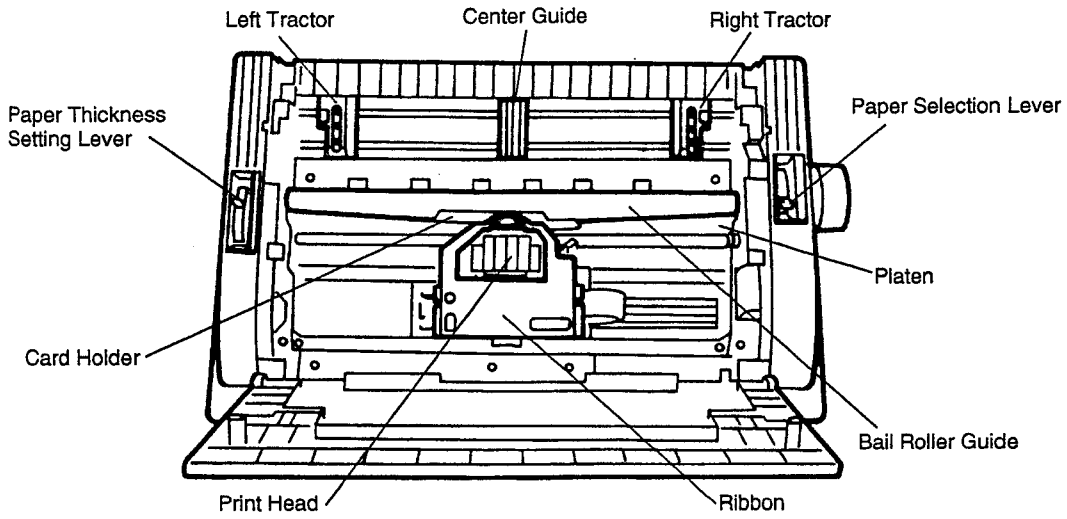


Figure 1-3 Inside View

HARDWARE DESCRIPTION

Figure 1-4 shows the printer block diagram. The following subsections describe the major assemblies of the printer: mother board, power board, mechanism assembly, control panel, and options.

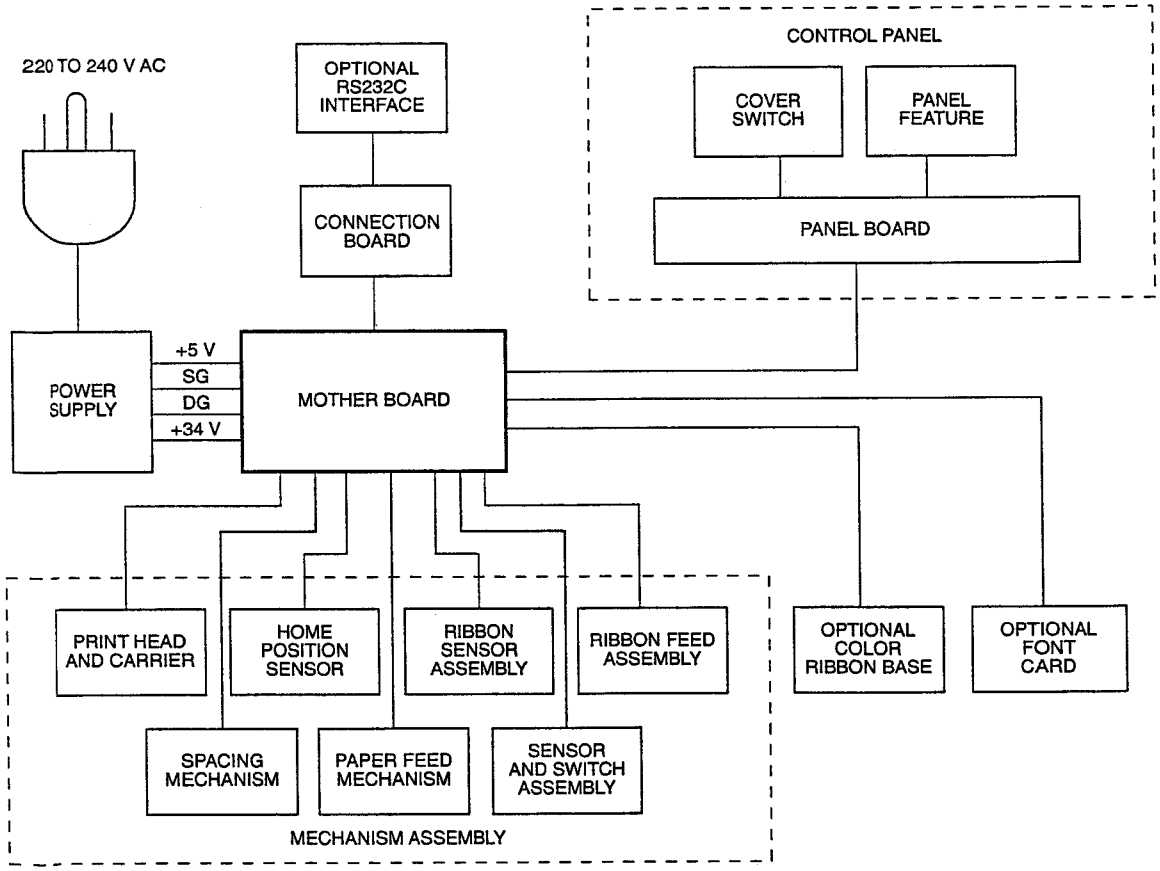


Figure 1-4 Pinwriter Block Diagram

Mother Board

The mother board is the main circuit board of the printer. It consists of the microprocessing unit (MPU) circuit, memory, and gate array (see Figure 1-5). Main Gate array's functions are parallel latch, interface and driver controller.

MICROPROCESSING UNIT

The microprocessing unit (MPU) μPD70208GF is the ultimate control for all printer functions. It controls the interface, memory, gate array, and timer by reading, paper status, print head temperature, and homing sensor status, as well as information from the control panel.

MEMORY

Printer memory consists of both random access memory (RAM) and read only memory (ROM). Only the two major types of RAM are described here - the image RAM and the receive buffer RAM. The program ROM, the character generator (CG) ROM, and EEPROM are also described.

The image RAM enables high-speed operation of the printing, backspace, delete, and cancel functions. It stores the image to be printed in the form of a bit pattern. The 256 bytes/48/80 kilobytes (KB) selectable receive buffer RAM stores the data received by the interface circuit.

The 256 KB program ROM (27C2001) contains the program that controls MPU operation. The 1024 KB (HN62418FBC) standard CG ROM contains the resident character sets of the printer.

The 1 K-bit EEPROM (NMC9346) is used for mode settings: print mode, format, paper handling, interface, RS-232C/V24, and print accuracy.

PARALLEL LATCH

The bit image information is moved from the image RAM to the parallel latch for controlling the print head driver. This information is then used as data for the printing operation.

DRIVER CONTROLLER

Driver controller controls the spacing motor driver circuit and line feed motor driver circuit.

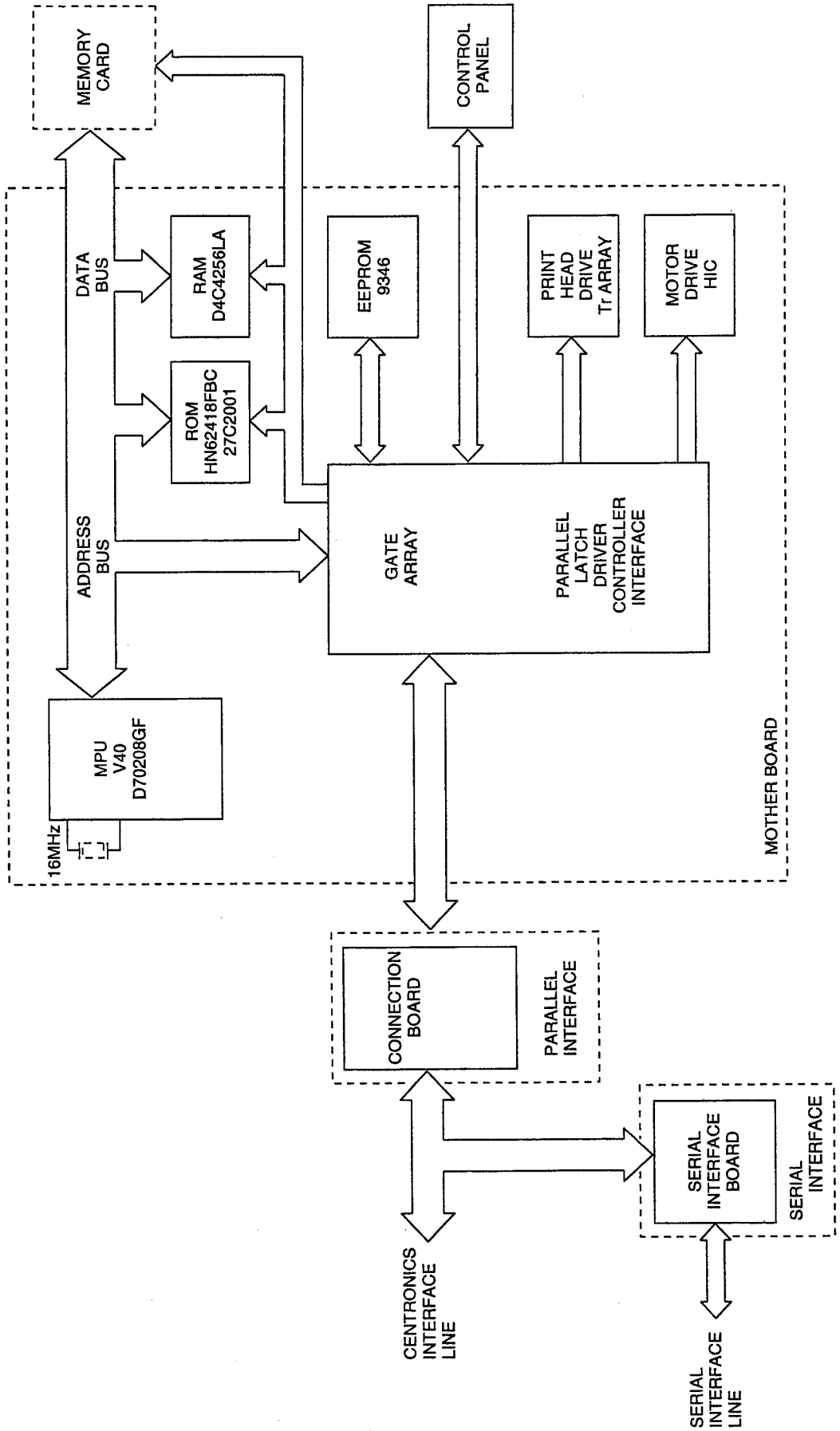


Figure 1-5 Mother Board Simplified Block Diagram

INTERFACE

The printer has either an IBM® compatible parallel interface or an RS-232C serial interface. The parallel interface supports control logic used on all IBM PC products and most clones. Parallel interface pin assignments and serial interface pin assignments are listed in Section 8.

Mechanism Assembly

The mechanical assembly consists of following subassemblies.

- Print Head Assembly
- Carrier Assembly
- Spacing Mechanism
- Home Position Switch Assembly
- Paper Feed Mechanism
- Ribbon Feed Assembly
- Sensor and Switch Assembly
- Ribbon Sensor Assembly

PRINT HEAD ASSEMBLY

The print head is mounted on the carrier and moves bidirectionally at a speed of up to 300 cps (at high-speed draft 12). The print head assembly consists of the following components (see Figure 1-6).

- 24 Pins
- 24 Corresponding Armatures, Magnets, and Solenoids
- Print Wire Guides

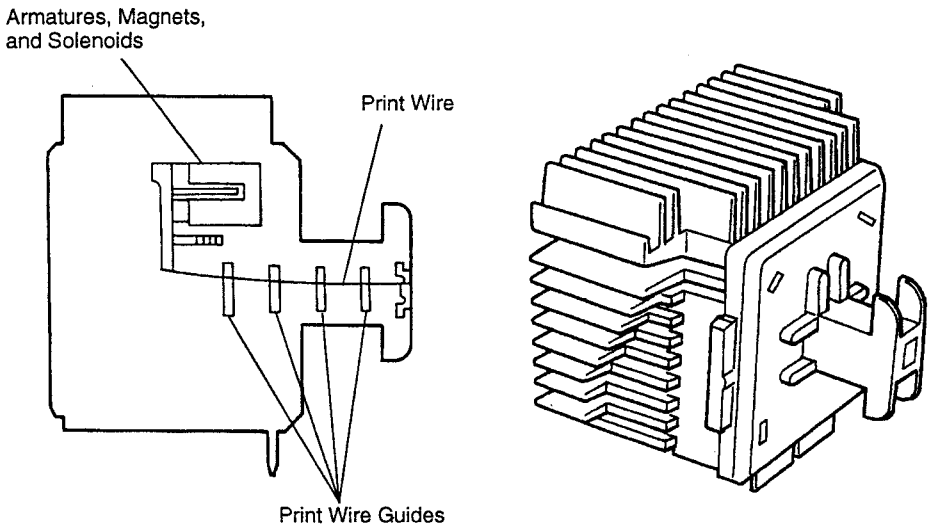


Figure 1-6 Print Head Assembly

The print wire guide, located at the tip of the print head, arranges the 24 pins in two staggered rows. The guide plate supports the pins at the center of the print head.

Printing occurs in the following manner. When a solenoid is energized, it moves an armature. This motion causes the pin that corresponds to the armature to strike the ribbon, printing a dot on the paper. An attached spring returns the pin to its resting position. Pins strike the ribbon simultaneously to form sequential rows until the dots form a complete character on the paper.

CARRIER ASSEMBLY

The carrier assembly consists of a carrier, card holder, and print head assembly (see Figure 1-7). The carrier rides on a guide shaft and slides along by the front stay. The card holder helps guide the paper around the platen and stabilize ribbon movement. The paper thickness setting lever located on the left end of the guide shaft allows you to adjust the gap between the print head and the platen.

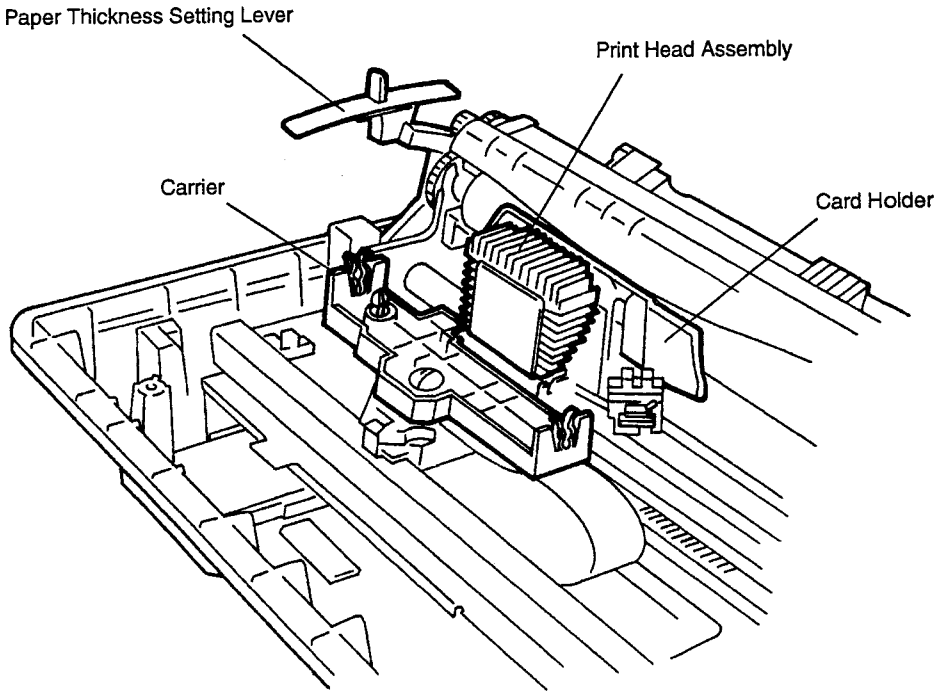


Figure 1-7 Carrier Assembly

SPACING MECHANISM

The spacing mechanism consists of a spacing motor, spacing motor pulley, tension spring, tension arm, driven pulley, pulley shaft, driven pulley collar and drive belt (see Figure 1-8). The looped drive belt is stretched by the spacing motor pulley and driven pulley. The carrier is fixed to the drive belt, and moves along the guide shaft and front stay according to the forward or reverse motion of the spacing motor.

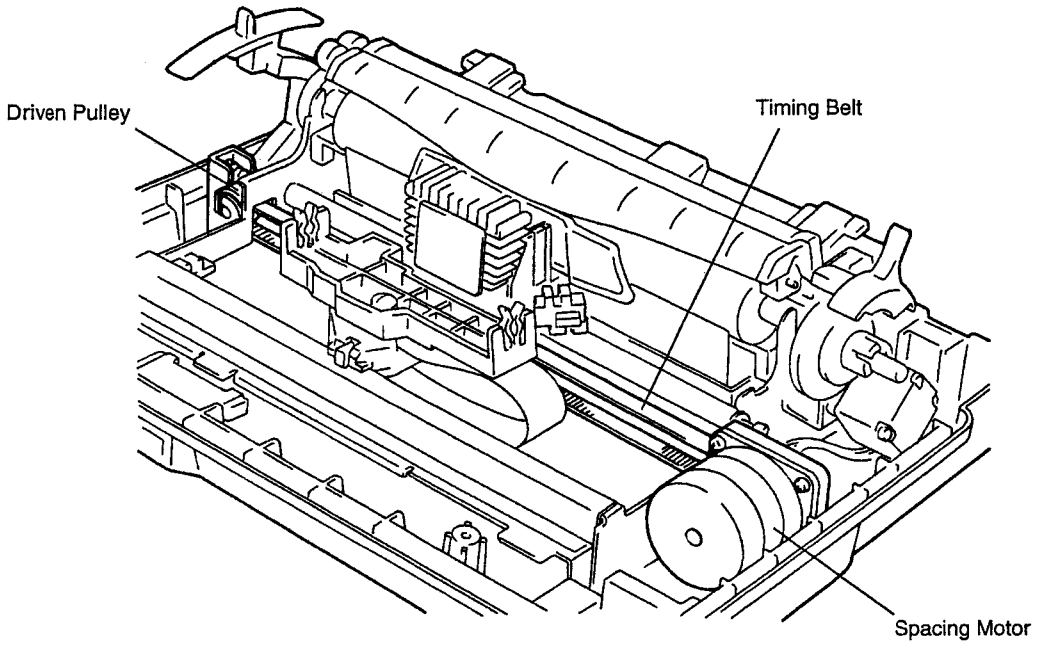


Figure 1-8 Spacing Assembly

HOME POSITION SENSOR ASSEMBLY

The home position sensor assembly consists of the photosensor assembly and sensor holder. Located on the frame at the far left side of the carrier, it detects the print head home position (see Figure 1-9). At power on, the print head automatically moves to the left until reaches the home position sensor and then stops. If the print head is at the left of the photosensor assembly already, it moves slightly to the right and then back to the home position.

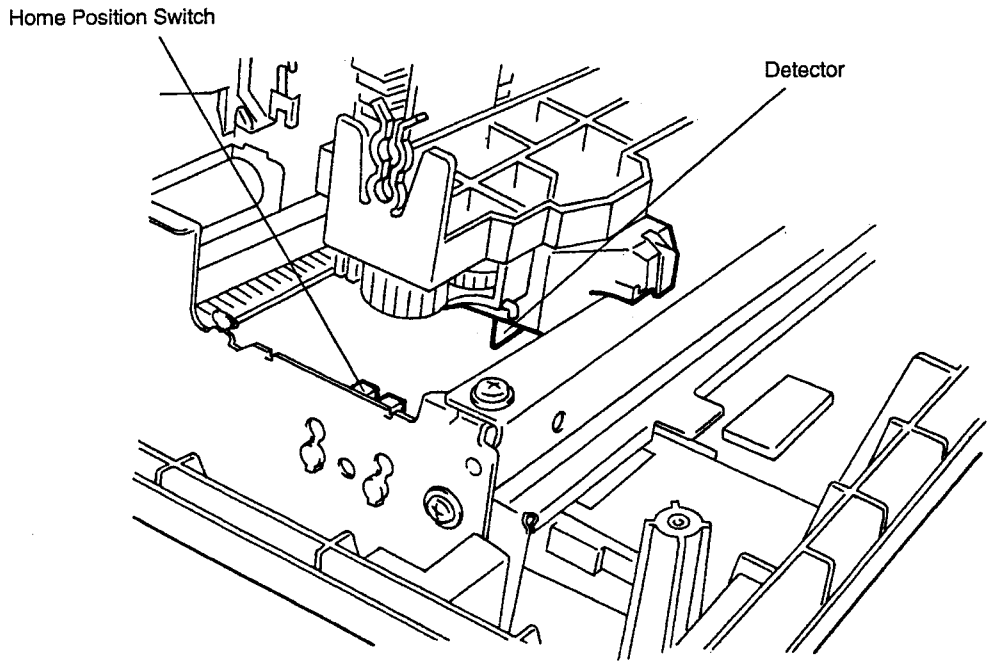


Figure 1-9 Home Position Switch Assembly

PAPER FEED MECHANISM

The paper feed mechanism feeds the paper by means of a line feed motor (see Figure 1-10). The motion of the line feed motor is transmitted to the platen or the push tractor through the tractor gear by setting the paper selection lever (see Figures 1-11 and 1-12). Two steps of the motor equals 1/360-inch of paper movement. A unit of minimum movement is two steps at least. During tractor feed, paper feeds bidirectionally in the same 1/360-inch increments.

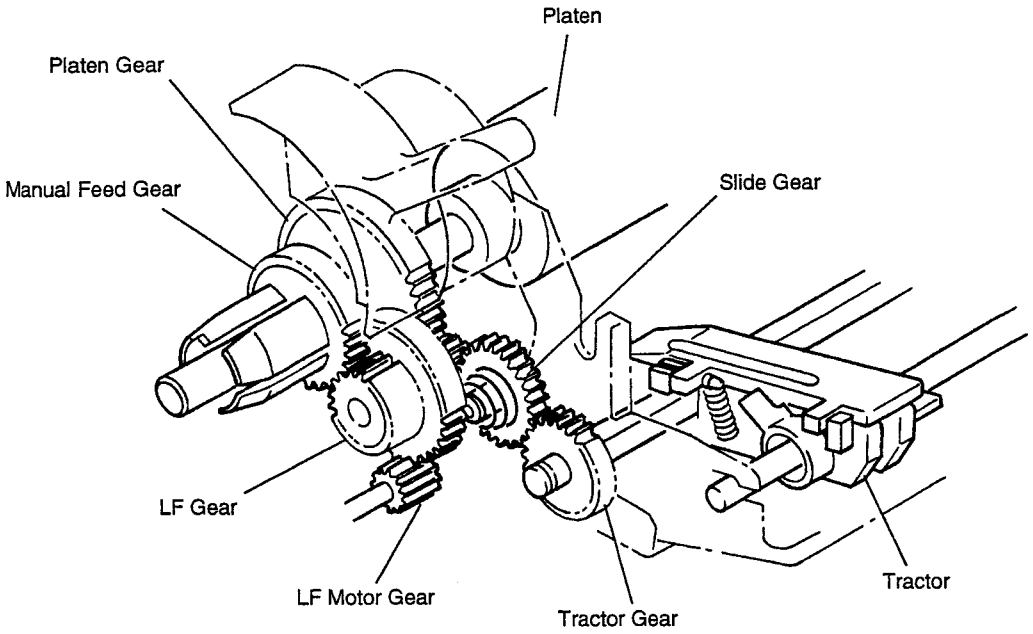


Figure 1-10 Paper Feed Assembly

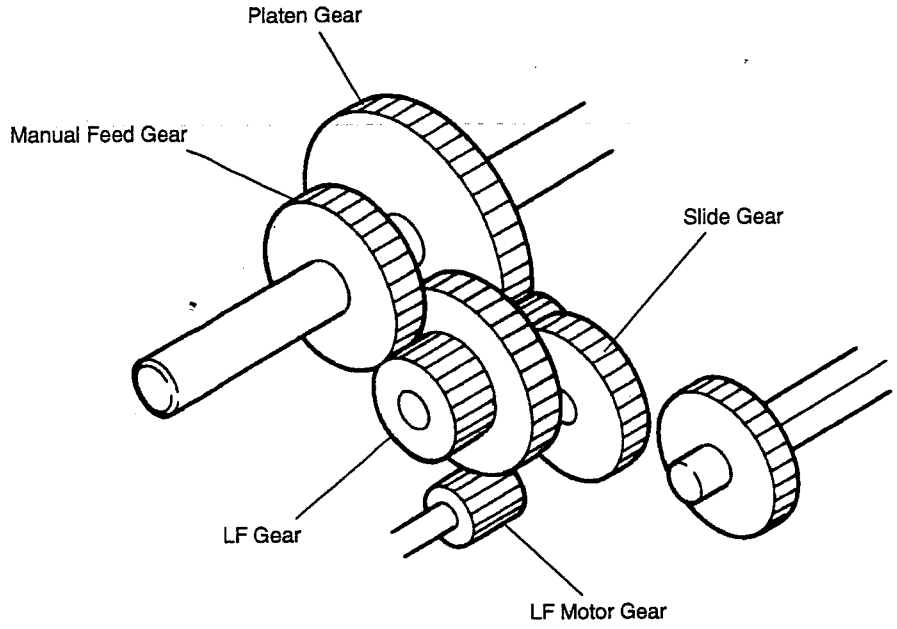


Figure 1-11 Gear Transmission for Platen Drive

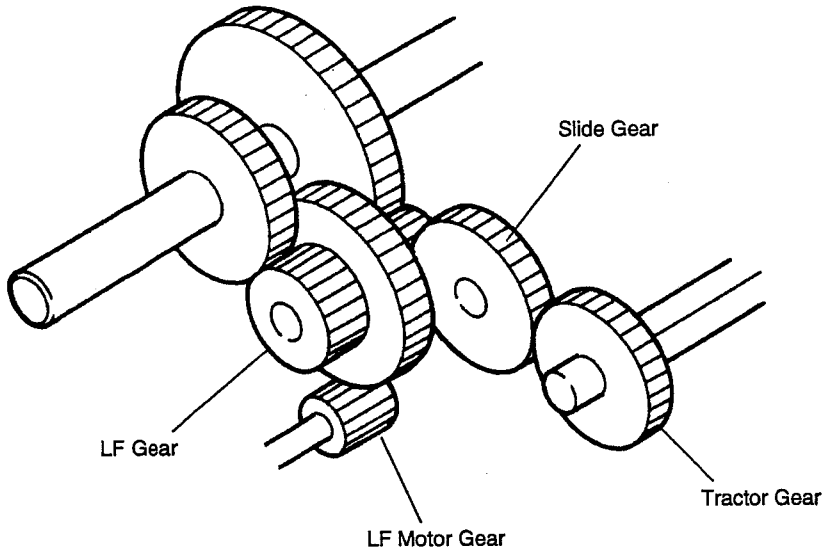


Figure 1-12 Gear Transmission for Push Tractor Drive

RIBBON FEED ASSEMBLY

Regardless of whether the carrier is moving left to right or right to left, the ribbon feed assembly feeds ribbon in one direction only by means of the torque piece gear (see Figure 1-13). The torque piece gear rotates in one direction. It is driven by the ribbon drive engaging with the ribbon feed pulley and ribbon feed wire (see Figure 1-14).

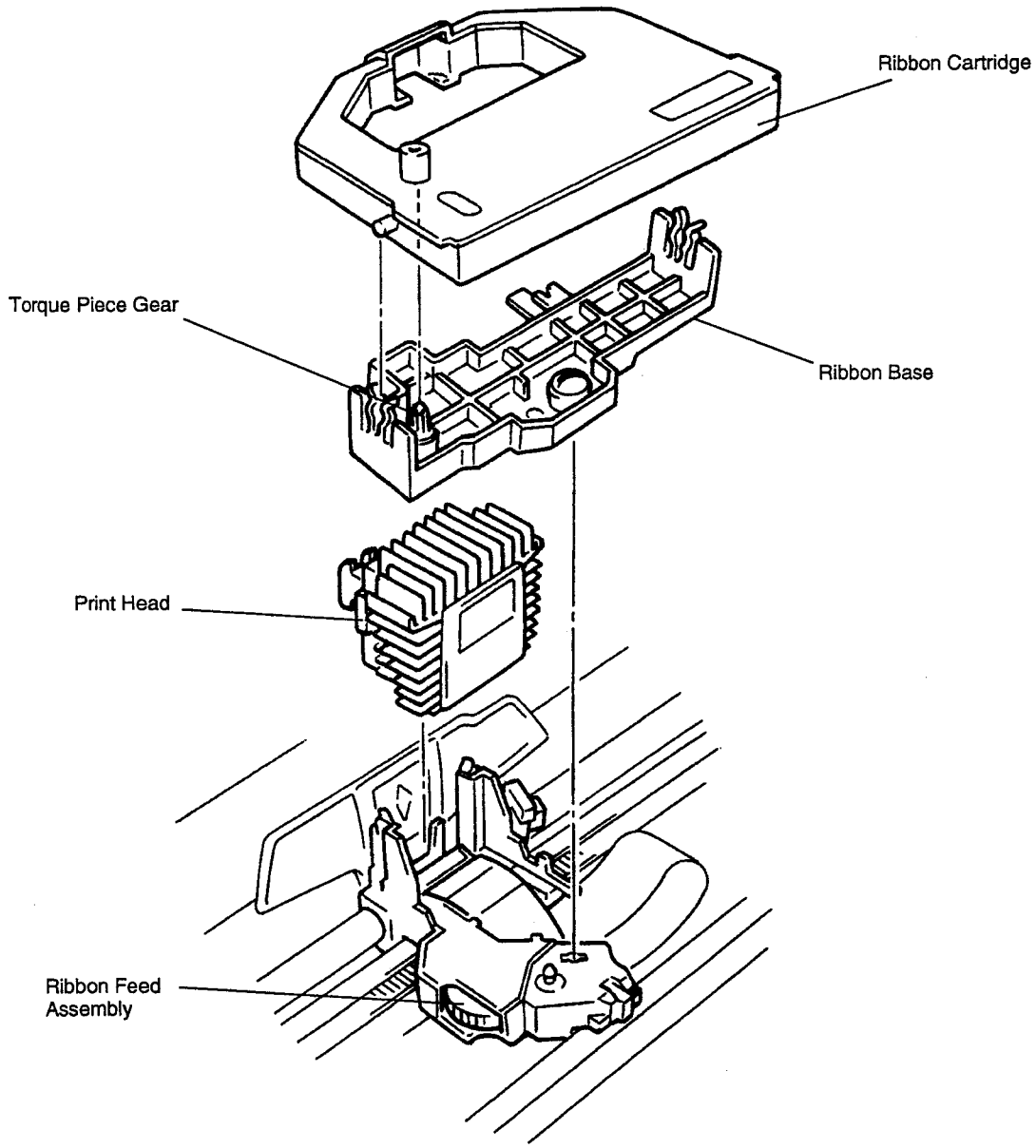


Figure 1-13 Ribbon Feed Assembly

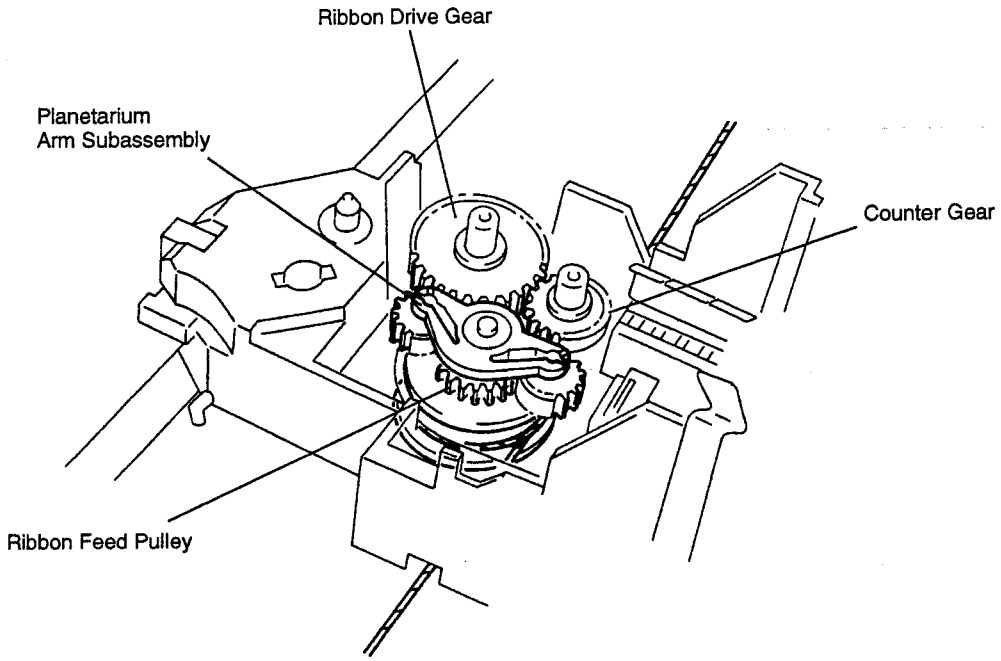


Figure 1-14 Ribbon Feed Mechanism

SENSOR AND SWITCH ASSEMBLY

The sensor and switch assembly consists of a

- MDL sensor,
- print force sensor,
- option sensor, and
- paper selection switch.

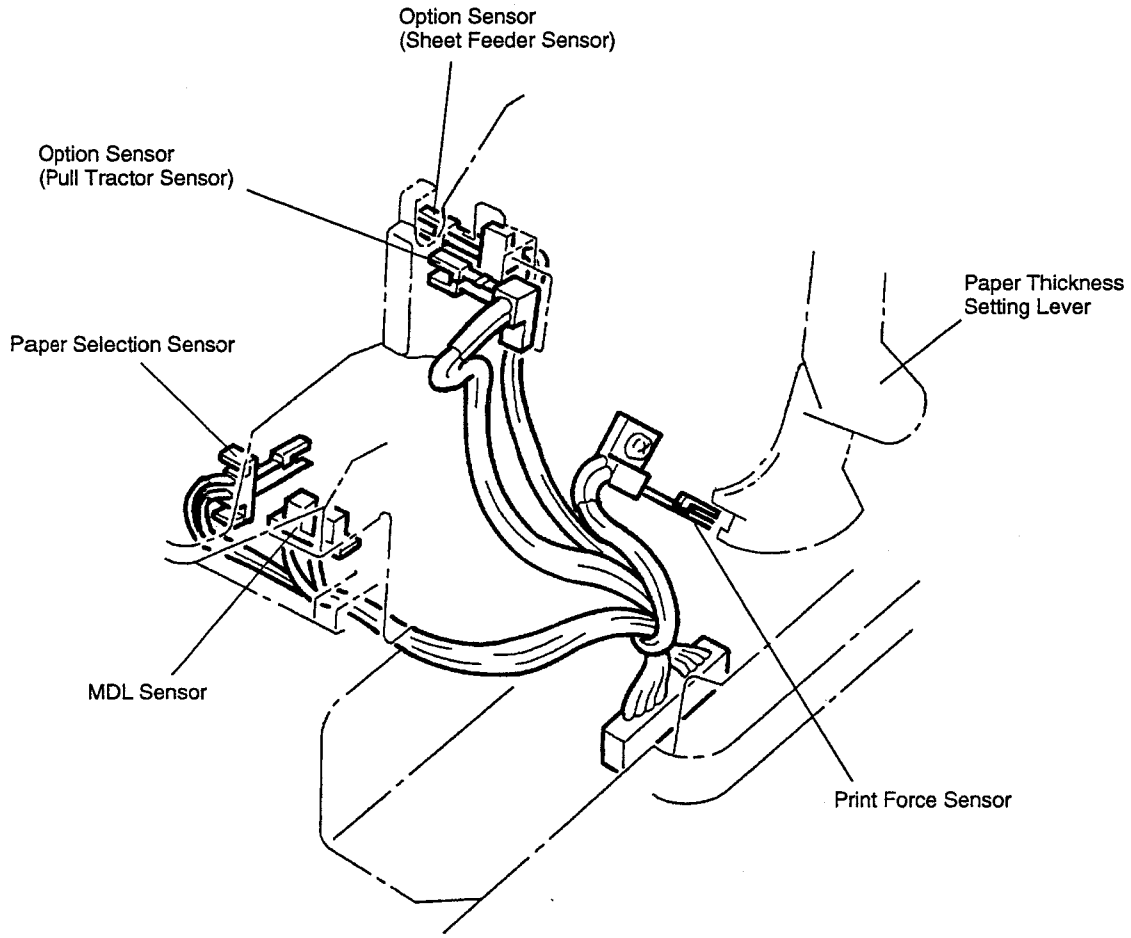


Figure 1-15 Sensor and Switch Assembly

MDL sensor assembly consist of a photo sensor, bracket, and two sensor levers (see Figure 1-16). While the paper supply exists, the sensor lever blocks the photo sensor, creating a signal that indicates paper exists. When the printer runs out of paper, the paper moves the sensor lever away from the photo sensor and light is reflected off the paper onto the sensor, creating a paper-out condition.

The print force sensor is located beside the paper thickness setting lever (see Figure 1-17). When the paper thickness setting lever is in position 5 through 10, the microswitch is activated to reduce print speed by 1/3 to ensure satisfactory print quality on three- and four-part forms.

The option sensor consits of two microswitches and bracket (see Figure 1-18). It senses the type of forms handling option. Two microswitches are either on or off, depending on the situations shown in Table 1-1.

Table 1-1 Forms Handling Option Status

Pull TR Sensor	S/F Sensor	Paper Selection Lever Position	MDL Sensor	Forms Handling Option
OFF	OFF	Rear	—	Push tractor
OFF	OFF	Front	—	Cut sheet guide
OFF	ON	Rear	—	Push tractor
OFF	ON	Front	Paper-out condition	Sheet feeder (hopper feed)
OFF	ON	Front	Paper-exist condition	Sheet feeder (manual feed)
ON	OFF	Rear	—	Pull tractor (push-pull feed)
ON	OFF	Front	—	Pull tractor (bottom feed)

The paper selection switch is located beside the MDL sensor (see Figure 1-19). When the paper selection lever is in continuous paper position (rear), the roller support bracket pushes the switch, then printer detects the lever position.

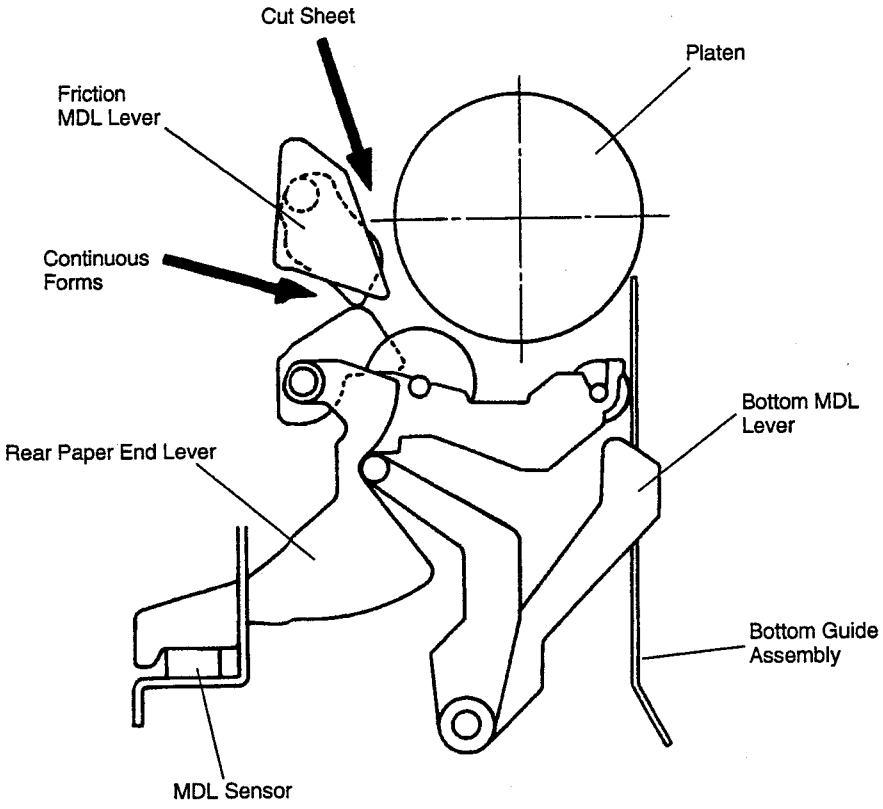


Figure 1-16 MDL Sensor

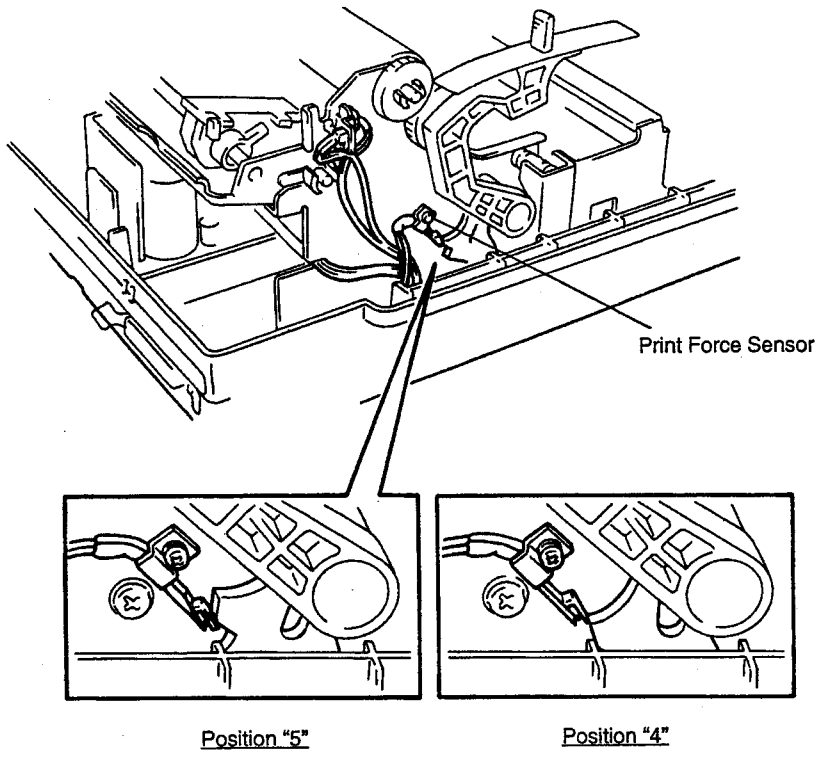


Figure 1-17 Print Force Sensor

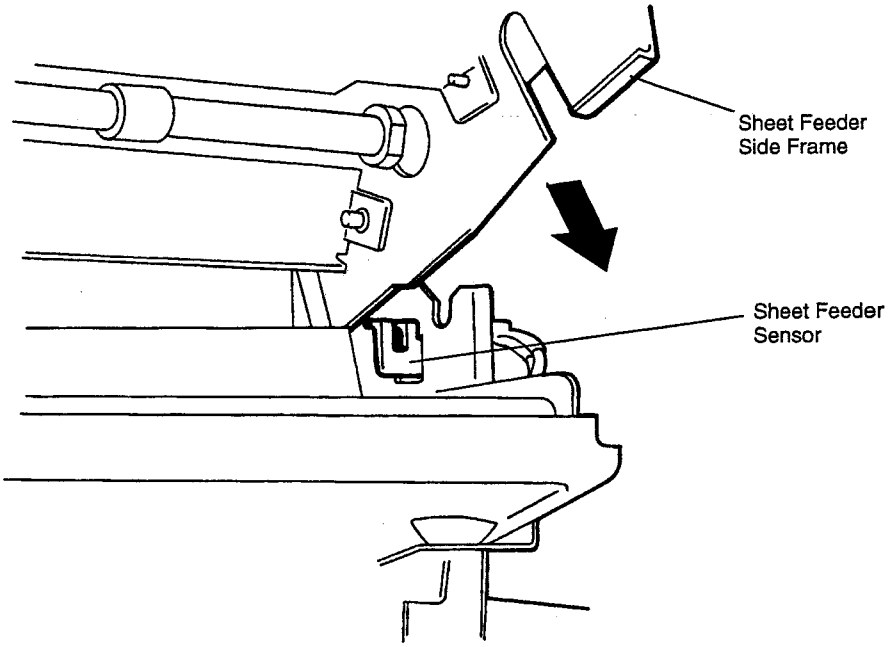


Figure 1-18 Option Sensor

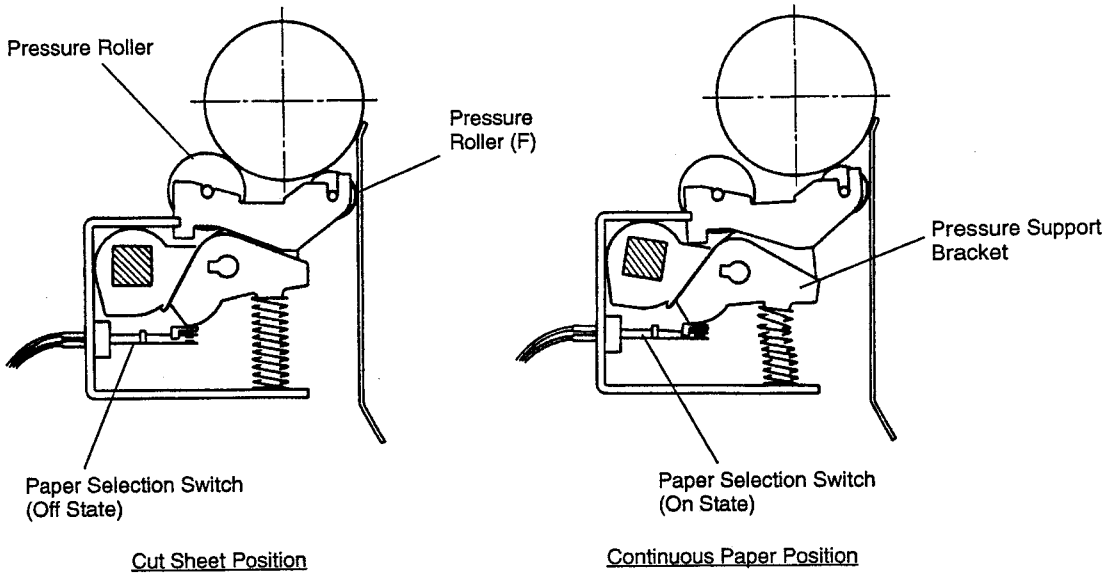


Figure 1-19 Paper Selection Switch

RIBBON SENSOR ASSEMBLY

The ribbon sensor assembly senses:

- the kinds of installed ribbon (black nylon, black multistrike film, or color nylon).
- ribbon empty (multistrike film ribbon is installed).
- color homing error.
- paper width.

This assembly is located on the carrier, beside the print head, and consists of a color sensor, a MS switch, and a paper width sensor (see Figure 1-20). Each color sensor and switch is either on or off, depending on the situations shown in Table 1-2.

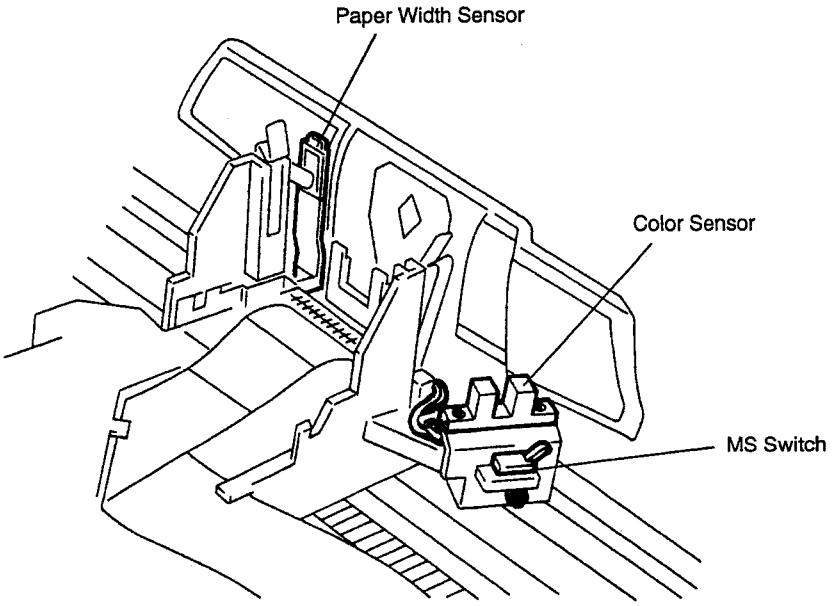


Figure 1-20 Ribbon Sensor Assembly

Table 1-2 Ribbon Situation

SIGNAL STATUS		RIBBON SITUATION
Color Sensor	**MS Switch**	
OFF	OFF	Black nylon ribbon is installed.
OFF	ON	Black multistrike film ribbon is empty.
ON	OFF	Color homing error.
ON	ON	Black multistrike film ribbon is installed.
ON/OFF	OFF	Color nylon ribbon is installed.

Paper Detection Function

This printer is equipped with a reflection type photosensor at the left of the print head and on the card holder. The sensor detects paper width (paper position) after the paper is loaded into the printer.

The detected paper width (paper position) serves for the following control purposes:

(a) Prevention of printing on the platen in the absence of paper.

(b) Automatic establishment of print position.

(c) Automatic establishment of centering position.

This function can be disabled in the menu mode.

- ENABLE ... Detects paper width and performs the controls of (a), (b) and (c).
- LIMITED ... Detects paper width and performs the controls of (a) and (c).
- DISABLE ... Does not detect paper width.

The paper width sensor detects the right- and left-end positions of paper in the following sequence:

1. The printer moves the carrier to the right, until the sensor detects presence → absence of paper, irrespective of whether or not the paper is located at the paper width detection position of the sensor.
2. Once presence → absence of paper is detected, the carrier stops at such a position that the sensor will be located approximately 20 mm to the right from there

   (see Figure 1-21). In case the said position falls beyond the extreme right end of the moving range of the carrier, it stops on the extreme right end of the said range.

   If the carrier cannot detect presence → absence of paper even after traveling as far as the limit position for paper right-end detection (approx. 12 mm to the left of the printable right-end position), then it stops on the extreme right end of the moving range. (see Figure 1-22).

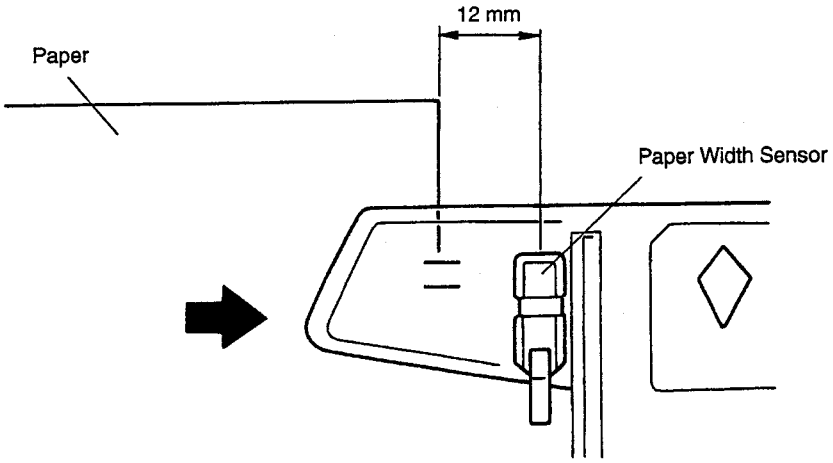


Figure 1-21 Carrier Return Position

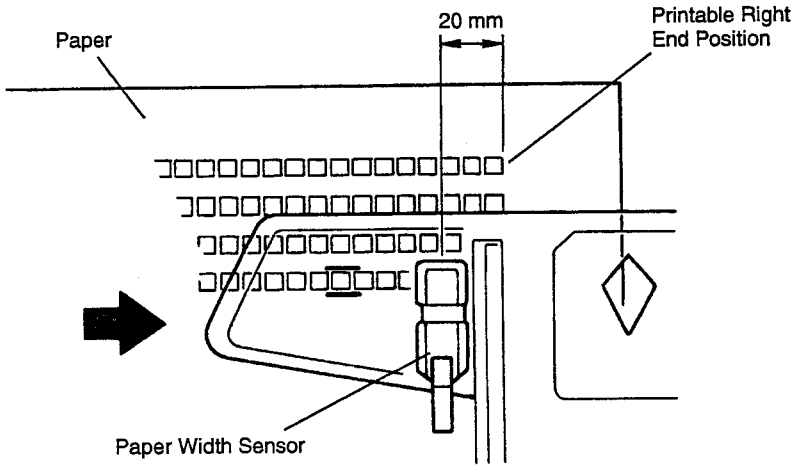


Figure 1-22 Printable Right End Position

3. The printer moves the carrier to the left.
4. When the sensor detects absence → presence of paper, it determines that point as the right end of the paper. However, if the paper is already located at the position of the paper width detection sensor as at the start of movement, it will determine that printing can be done as far as the printable right-end position (see Figure 1-23).

   If the sensor cannot detect absence → presence of paper before it reaches the printable left-end position, the carrier stops at its home position.

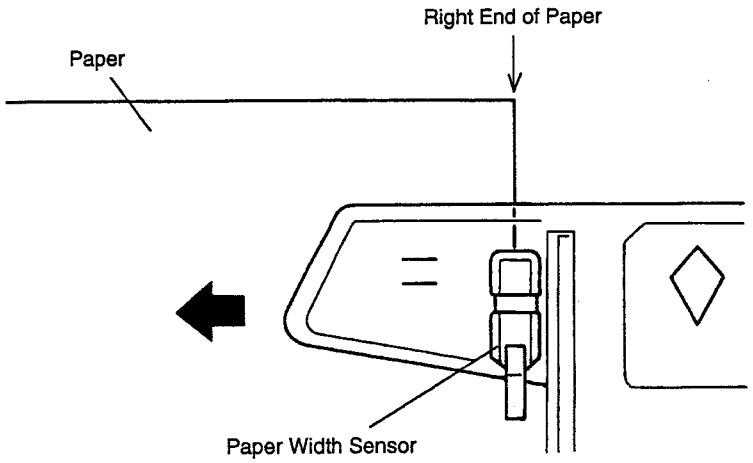


Figure 1-23 Paper Right End Detection

5. When the sensor detects presence → absence of paper, it determines that point as the left end of the paper. Once the left end of the paper is detected, the carrier stops at such a position that the sensor will be located approximately 30 mm to the left of the left end (position where the paper does not come off the card holder). If the above position falls beyond the home position, the carrier stops at its home position (see Figure 1-24).

   Moreover, if the sensor cannot detect presence → absence of paper before it reaches the printable left-end position, it determines that printing can be done as far as the printable left-end position, and the carrier stops at its home position.

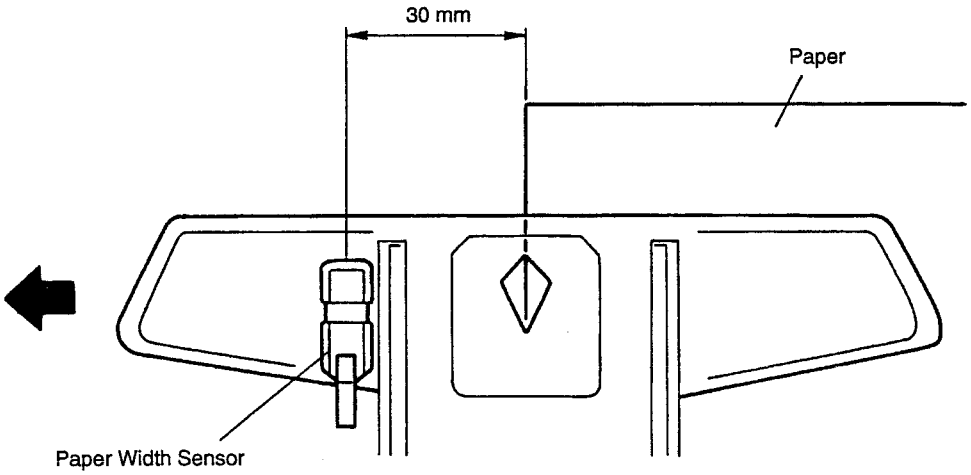


Figure 1-24 Paper Left End Detection

If paper width detection takes place automatically following the paper loading action (paper loading of sheet guide and paper loading of sheet feeder) and the sensor cannot detect absence → presence of paper by the operation of step 4, the printer will issue a "PAPER JAM" error.

However, if the sensor cannot detect absence → presence of paper by the operation of step 4 in other cases, the printer will not issue an error, but will interpret that printing can be executed as far as the printable left- and right-end positions.

NOTES

- The sensor can recognize sprocket holes of continuous paper exactly as such. Therefore, the printable range remains unchanged by paper position when continuous paper is used.
- The sensor can recognize even colored portions of paper as such, as long as they are not in dark colors (black, dark blue and so forth).
- The sensor can recognize rules correctly as such. (However, it may recognize a rule thicker than 4 mm as paper end.)

Control Panel

The control panel is located on the front of the printer and contains the buttons and indicators that allow you to control the printer, set print parameters, and monitor its status (see Figure 1-25). Section 3 discusses use of the control panel.

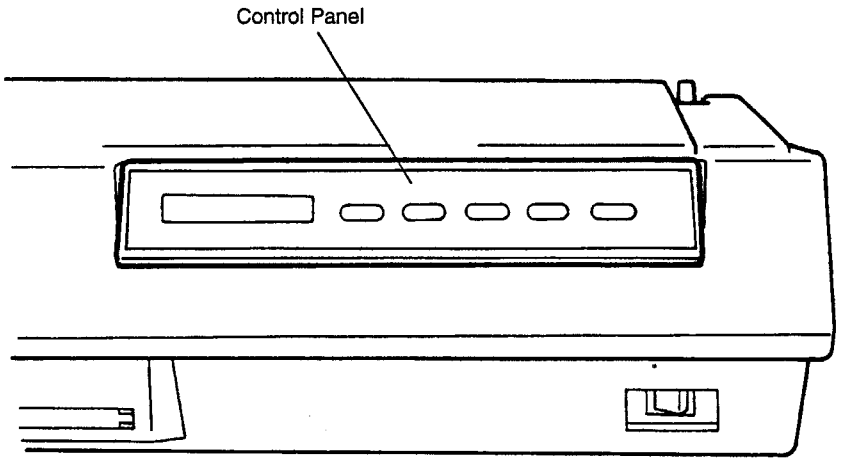


Figure 1-25 Control Panel

Power Board

The Pinwriter can use two types of power boards. The PSD Power (C) PCB (808-891104-313-A) or the PSG-C1 Power PCB (808-891379-313-A).

The power board unit converts AC power into DC power and supplies DC voltage to the control circuit unit, the print head driver circuit and the motor driver circuit. The input voltage for these power boards are as follows.

Input voltage: 220 - 240 +/-10%
Frequency: 50/60 Hz
Amperage: 250V/3.15A

The power board circuit supplies +5V to the control circuit and +34V to the driver circuit of the print head and the motor. The current capacity corresponding to each output votage is shown in Table 1-3.

Table 1-3 Output Voltage Capacity

DC VOLTS	AMPS
5+/-5% 34+/-7%	2 Max. 4.5 Average

Figure 1-26 shows the block diagram for the PSD Power (C) PCB (808-891104-313-A) and Figure 1-27 shows the block diagram for the PSG-C1 Power PCB (808-891379-313-A).

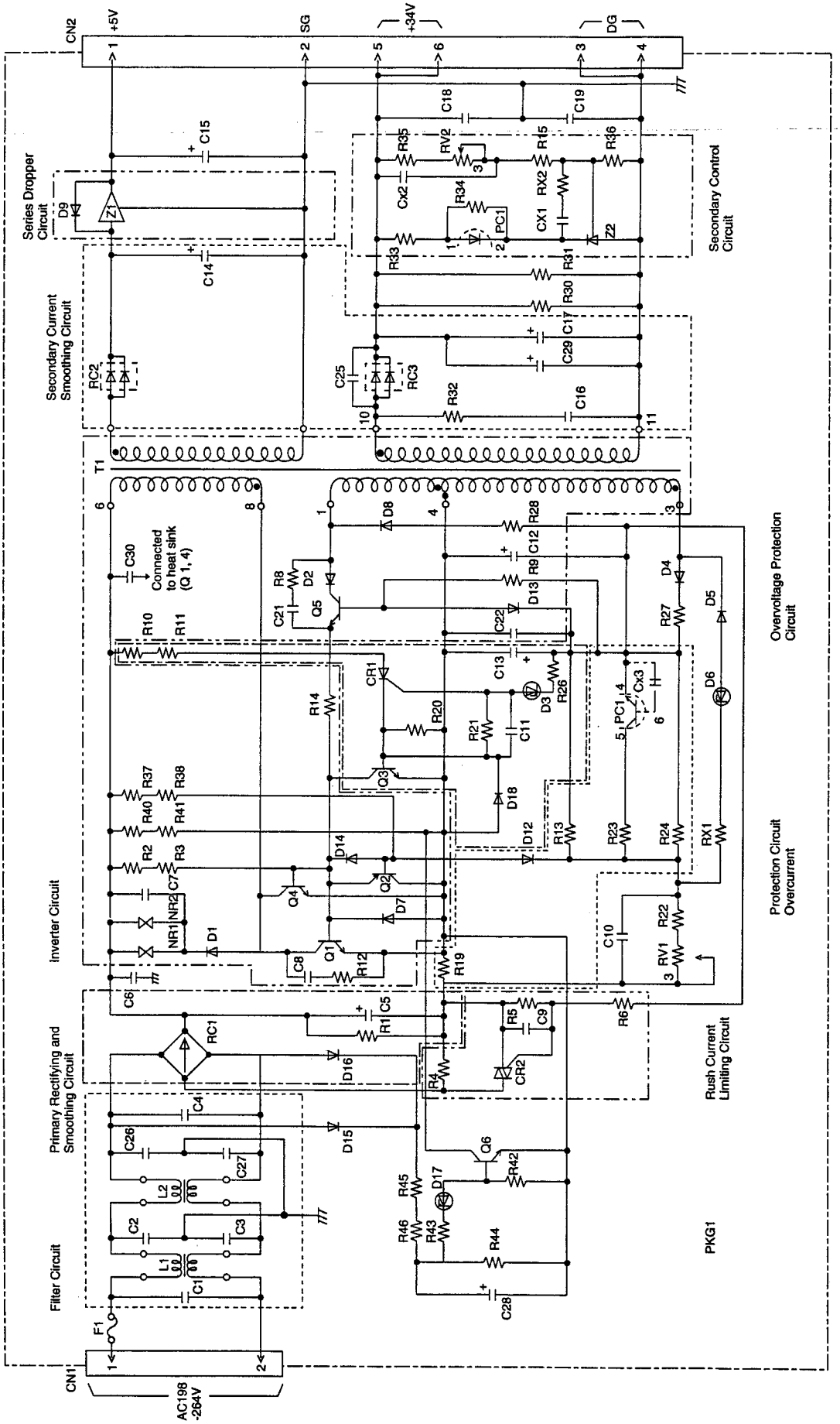


Figure 1-26 PSD Power (C) Circuit Diagram

PSD POWER (C) PCB (808-891104-313-A)

This power supply board consists of a printed-circuit board, and delivers +34V and +5V. An overall outline of the PCB is shown in the circuit diagram (Figure 1-26). Its basic circuit is configured by a self-excited ringing choke converter (RCC).

Filter Circuit

The circuit absorbs the normal and common mode noise through choke coils (L1, L2) and capacitors (C1, C2, C3, C4, C26, C27).

Primary Rectifying And Smoothing Circuit

The circuit rectifies the AC input voltage through a rectifier (RC1) and charges it in an electrolytic capacitor (C5) for smoothing it.

Rush Current Limiting Circuit

The circuit controls with a resistor (R4) the rush current which is generated at the time when AC power is switched on.

Inverter Circuit

The DC current, smoothed through the primary rectifying and smoothing circuit, is absorbed into the primary-side winding of a transformer (T1).
That energy is transferred to the secondary-side winding of the transformer (T1) by repetitive on/off switchings of transistors (Q1, Q2).
The control circuit of the RCC drives the transistors (Q1, Q2) at approximately 60 kHz.

Secondary Rectifying And Smoothing Circuit

The energy, arriving at the secondary-side circuit, is rectified by a rectifier for +34V output (RC3) and smoothed by smoothing capacitors (C17, C23) to be finally converted into a constant voltage of +34V.
Moreover, the circuit also rectifies the energy through a rectifier for +5V output (RC2) and smooths it through a smoothing capacitor (C14) to convert it into a metastable voltage of +6V.

Series Dropper Circuit

This circuit consists of a 3-terminal regulator IC (Z1).
The said 3-terminal regulator IC (Z1) receives through its input terminal the +6V metastable voltage from the secondary-side rectifier circuit, and drops it to deliver a constant voltage of +5V through the output terminal.

Secondary-Side Control Circuit

Voltage difference between the +34V output voltage and the secondary-side control circuit passes through a photocoupler (PC1) to enter the primary-side control circuit.
The differential voltage is amplified and sent out as a feedback signal.
This feedback signal serves to control the pulse width (on/off time) of transistors (Q1, Q4).

Overvoltage Protection Circuit

In case the output voltage of the secondary winding of the transformer (T1) rises abnormally due to malfunction of the control circuit because it suffers some damage or for other reasons, this circuit halts the oscillation of transistors (Q1, Q4) to shut down the whole output.

Overcurrent Protection Circuit

Out of the maximum energy transferred from the primary-side circuit to the secondary-side circuit through a transformer (T1), a resistor (R19) determines the emitter current of transistors (Q1, Q4). When a current in excess of certain current value is about to flow, this circuit starts to operate, reducing the pulse width and drooping the total output.
For the +5V output, an overcurrent protection circuit is incorporated inside the 3-terminal regulator IC (Z1).

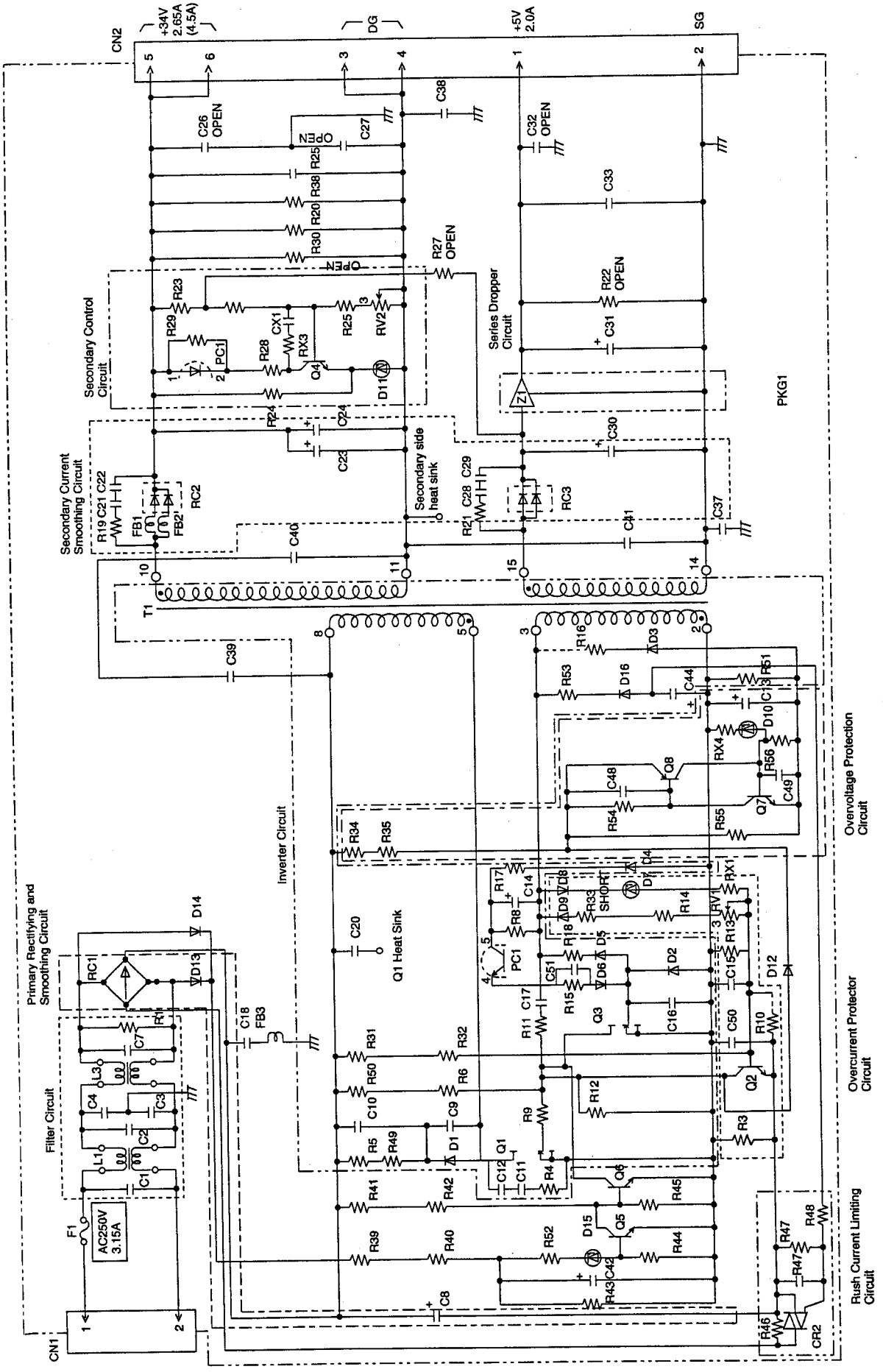


Figure 1-27 PSG-C1 Power Circuit Diagram

PSD-C1 POWER (C) PCB (808-891379-313-A)

This power supply board consists of a printed-circuit board, and delivers +34V and +5V. An overall outline of the PCB is shown in the circuit diagram (Figure 1-27). Its basic circuit is configured by a self-excited ringing choke converter (RCC).

Filter Circuit

The circuit absorbs the normal and common mode noise through choke coils (L1, L3) and capacitors (C1, C2, C3, C4, C27).

Primary Rectifying And Smoothing Circuit

The circuit rectifies the AC input voltage through a rectifier (RC1) and charges it in an electrolytic capacitor (C8) for smoothing it.

Rush Current Limiting Circuit

The circuit controls with a resistor (R46) the rush current which is generated at the time when AC power is switched on.

Inverter Circuit

The DC current, smoothed through the primary rectifying and smoothing circuit, is absorbed into the primary-side winding of a transformer (T1).
That energy is transferred to the secondary-side winding of the transformer (T1) by repetitive on/off switchings of a transistor (Q1).
The control circuit of the RCC drives the transistor (Q1) at approximately 85 kHz.

Secondary Rectifying And Smoothing Circuit

The energy, arriving at the secondary-side circuit, is rectified by a rectifier for +34V output (RC3) and smoothed by smoothing capacitors (C23, C24) to be finally converted into a constant voltage of +34V.
Moreover, the circuit also rectifies the energy through a rectifier for +5V output (RC2) and smooths it through a smoothing capacitor (C30) to convert it into a metastable voltage of +6V.

Series Dropper Circuit

This circuit consists of a 3-terminal regulator IC (Z1).
The said 3-terminal regulator IC (Z1) receives through its input terminal the +6V metastable voltage from the secondary-side rectifier circuit, and drops it to deliver a constant voltage of +5V through the output terminal.

Secondary-Side Control Circuit

Voltage difference between the +34V output voltage and the secondary-side control circuit passes through a photocoupler (PC1) to enter the primary-side control circuit.
The differential voltage is amplified and sent out as a feedback signal.
This feedback signal serves to control the pulse width (on/off time) of a transistor (Q1).

Overvoltage Protection Circuit

In case the output voltage of the secondary winding of the transformer (T1) rises abnormally due to malfunction of the control circuit because it suffers some damage or for other reasons, this circuit halts the oscillation of the transistor (Q1) to shut down the whole output.

Overcurrent Protection Circuit

Out of the maximum energy transferred from the primary-side circuit to the secondary-side circuit through a transformer (T1), a resistor (R3) determines the emitter current of a transistor (Q1). When a current in excess of certain current value is about to flow, this circuit starts to operate, reducing the pulse width and drooping the total output.
For the +5V output, an overcurrent protection circuit is incorporated inside the 3-terminal regulator IC (Z1).

Ribbon Cartridges

There are three types of ribbon cartridges for the Pinwriter.

- Black Nylon Ribbon Cartridge
- Black Multistrike Film Ribbon Cartridge
- Color Nylon Ribbon Cartridge

BLACK NYLON RIBBON CARTRIDGE

This cartridge uses continuous loop, nylon fabric ribbon and it should be replaced when print quality becomes unsatisfactory (see Figure 1-28).

BLACK MULTISTRIKE FILM RIBBON CARTRIDGE

This cartridge uses carbon film ribbon, so it produces even sharper print quality than fabric ribbon cartridge (see Figure 1-29). This cartridge should be replaced when the ribbon is used up.

COLOR NYLON RIBBON CARTRIDGE

This cartridge uses continuous loop, four-color nylon fabric ribbon, so it produces multicolor printing when the color ribbon base is installed (See Figure 1-30). It should be replaced when print quality becomes unsatisfactory.

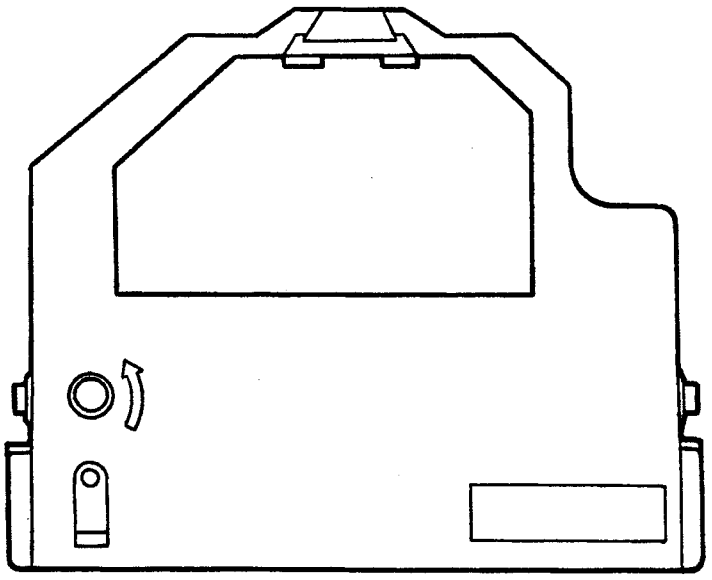


Figure 1-28 Black Nylon Ribbon Cartridge

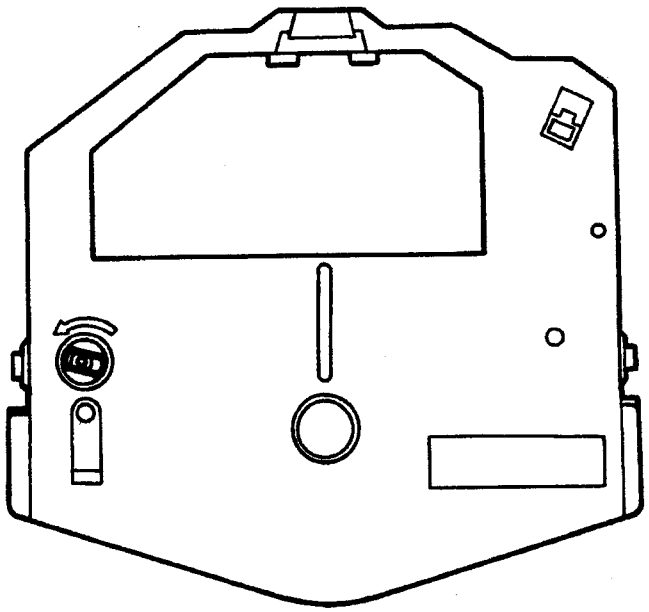


Figure 1-29 Black Multistrike Film Ribbon Cartridge

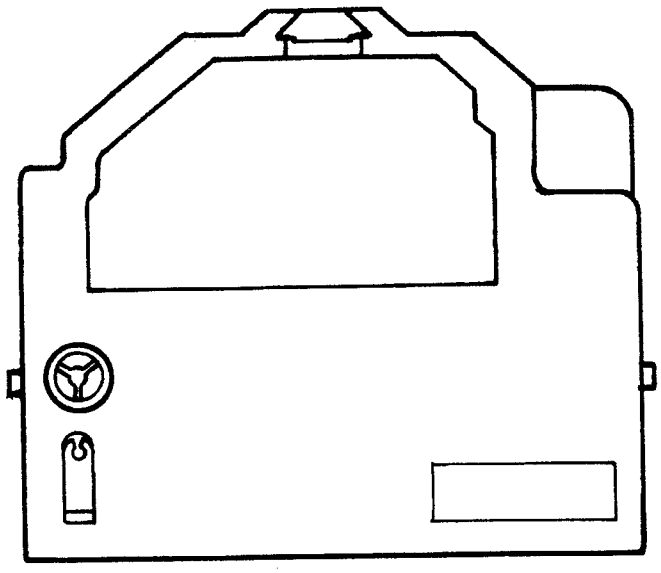


Figure 1-30 Color Nylon Ribbon Cartridge

Options

Several options are available for the printer, including font cards, serial interface kit, several sheet feeders, pull tractor, and an color Kit.
Each is briefly described in the following paragraphs.

FONT CARDS

Optional front cards can be inserted into the slot in the front of the printer (see Figure 1-31). Each font card has a capacity of 64 or 128 KB and adds an extra front to the printer. Section 7 includes a listing of available fonts.

SERIAL INTERFACE OPTION 5207

The RS-232C serial interface kit consists of a serial board and connector. The serial board plugs into the connector board inside the printer (see Figure 1-32). The serial interface converts serial data to parallel data. The main components of the interface board are:

- μPD78C11G-251 MPU — controls the operation of the RS-232C interface and stores the program
- μPD4364C RAM — stores received data (8 KB)
- pseudo-Centronics® interface — transfers data to the system board
- dc-dc converter — converts +5 V from the power board to ±12 V to be used by the RS-232C interface driver.

Details of the serial interface are included in the Section 8. Installation instructions for the serial interface are included with the serial interface kit.

SHEET FEEDERS

The sheet feeder options are used for loading and printing single sheets and envelopes. The P62/P72 uses one of two feeders: a one-bin sheet feeder or a dual bin sheet feeder (see Figures 1-33 and 1-34).

P62 : Sheet Feeder 4613, Dual Bin Sheet Feeder 4614
P72 : Sheet Feeder 4713, Dual Bin Sheet Feeder 4714

The dual bin sheet feeder allows alternate selection of letterhead and second pages, or the selection of envelopes.

PULL TRACTOR

The pull tractor option moves continuous paper through the printer (see Figure 1-35).

P62 : Pull Tractor 4619
P72 : Pull Tractor 4719

The pull tractor allows bottom feed and push-pull to print continuous forms paper (see Figures 1-36 and 1-37).

COLOR KIT 5208

The optional color kit enables the printer to produce multicolor printing (see Figure 1-38).

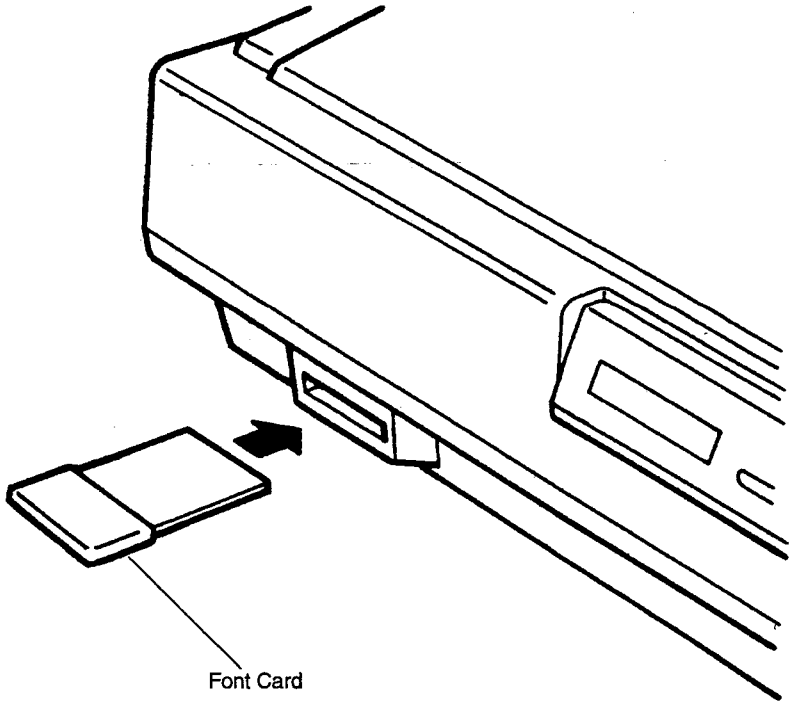


Figure 1-31 Optional Cards

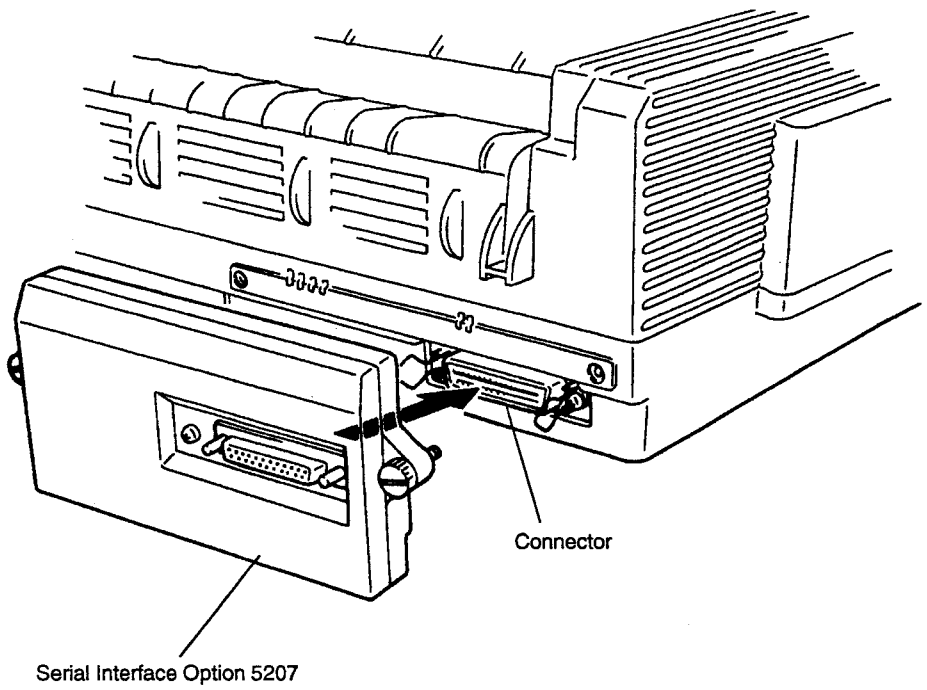


Figure 1-32 Serial Interface Option 5207

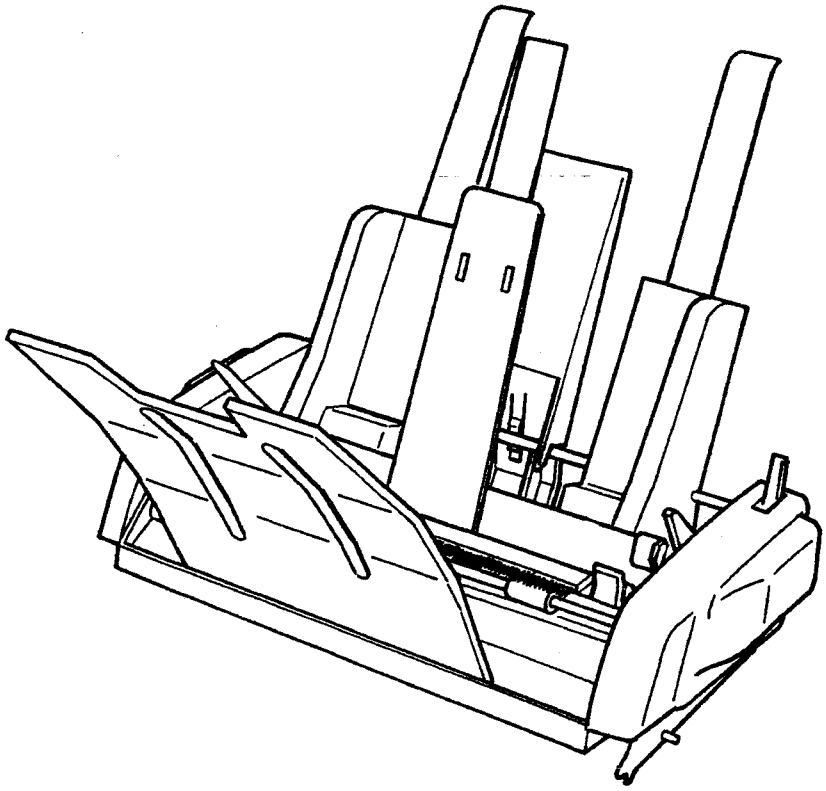


Figure 1-33 One-Bin Sheet Feeder 4613

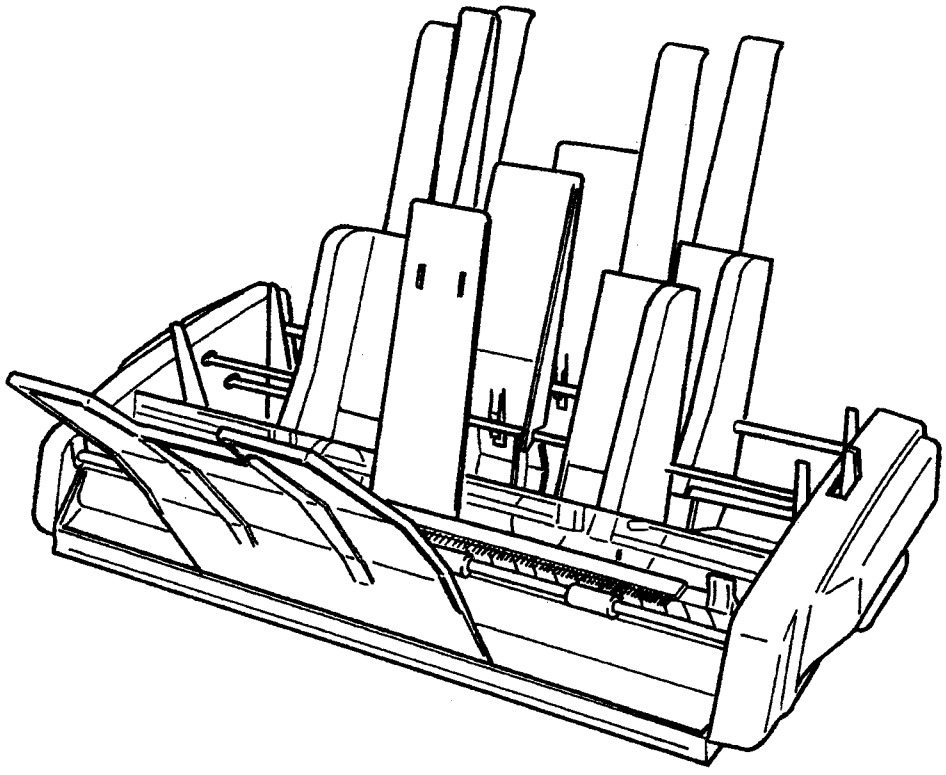


Figure 1-34 Dual-Bin Sheet Feeder 4714

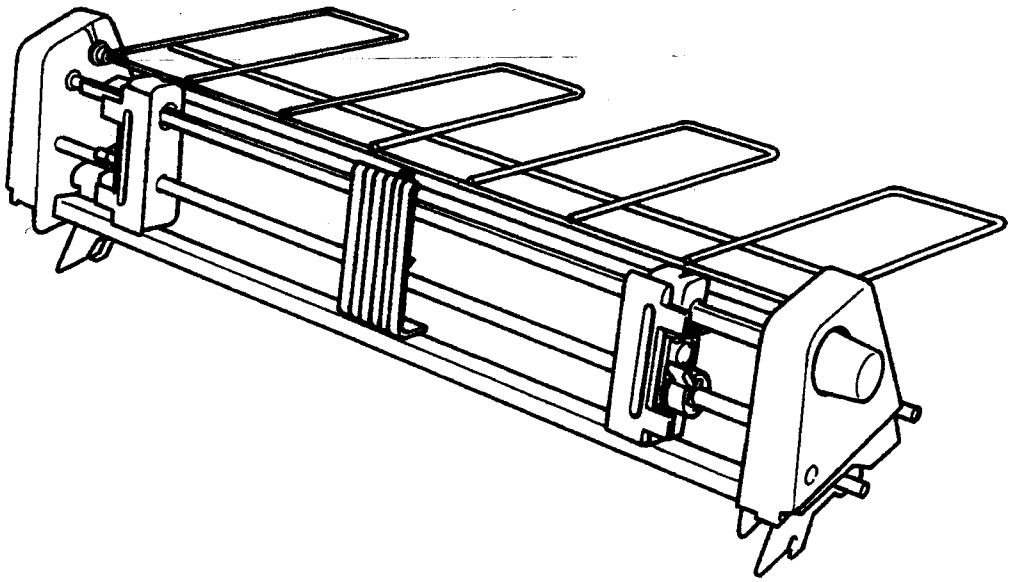


Figure 1-35 Pull Tractor 4719

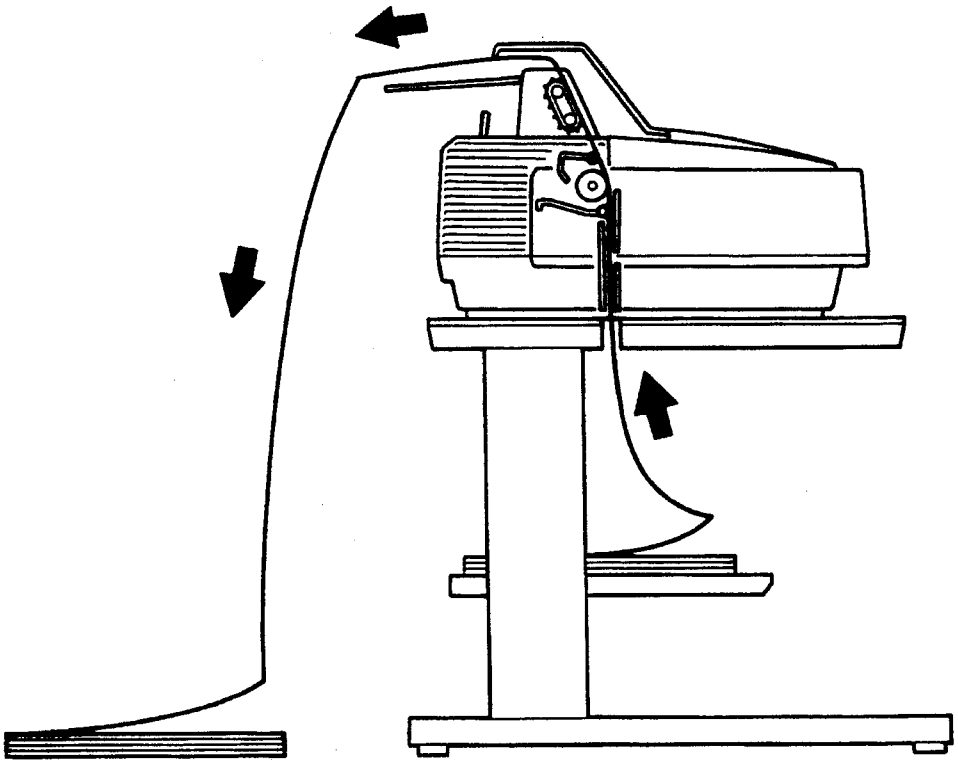


Figure 1-36 Bottom Pull Tractor Feeding

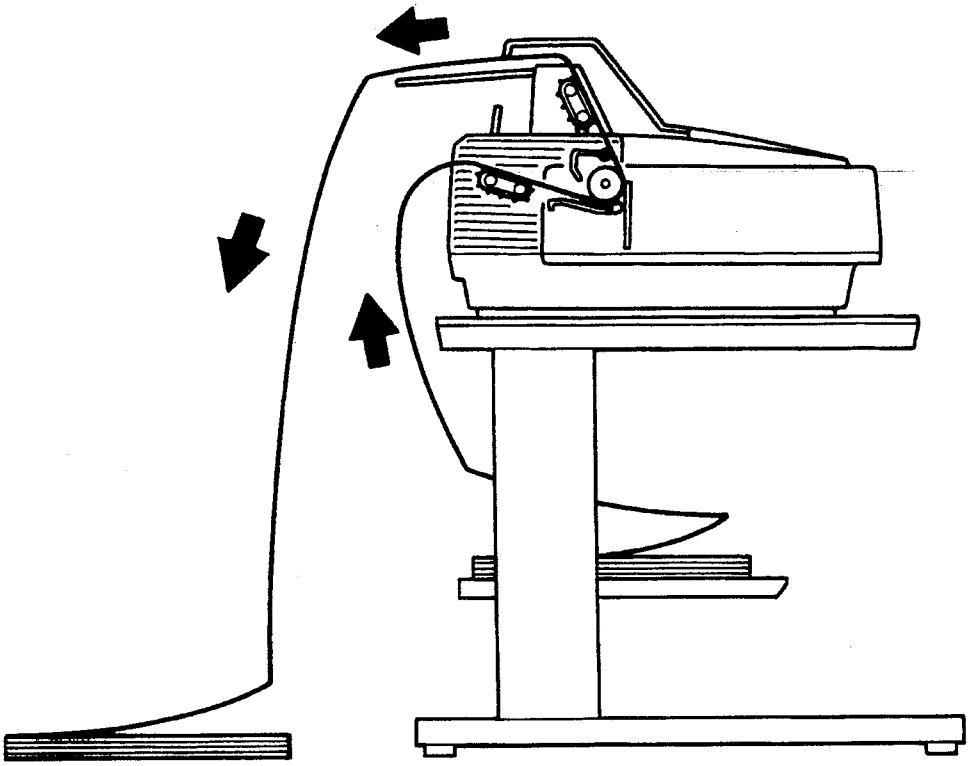


Figure 1-37 Push-Pull Tractor Feeding

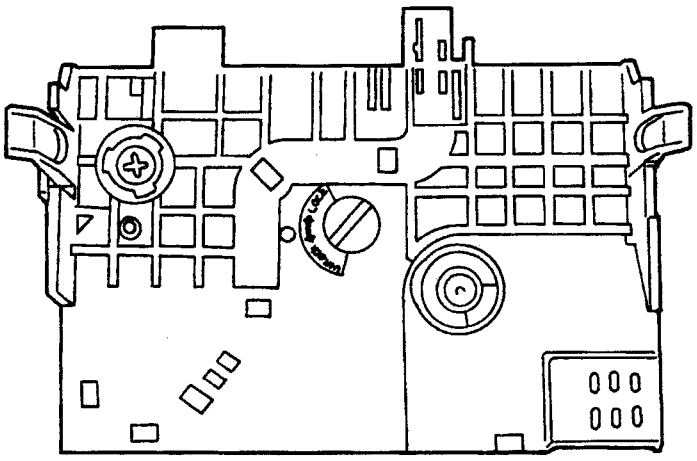


Figure 1-38 Color Ribbon Base

SPECIFICATIONS

Table 1-4 provides the printer specifications.

Table 1-4 Specifications

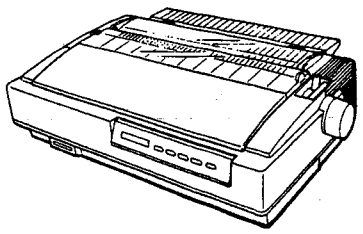
ITEM	SPECIFICATION
Print Method	Impact, 24-pin dot matrix, 2 x 12 staggered pin arrangement
Type Style	Courier Prestige Elite ITC Souvenir Bold PS Times PS Helvetica PS Quick Gothic Letter Gothic
Dot Size	0.2 mm (0.0079 in.)
Dot Spacing	Vertical — 180 or 360 dpi Horizontal — 60, 80, 90, 120, 180, 240, or 360 dpi
Vertical Line Spacing	3, 4, 6 or 8 lpi n/60, n/180, or n/360-in. line spacing Slew rate — 5.5 in. per second
Resolution (dpi)	360 vertical x 360 horizontal
Receive Buffer	Parallel — 80 KB, 48 KB, or 256 B (with 32 KB down loaded buffer) Serial — 8KB optional for 88 KB or 56 KB total
Paper Handling	Single sheets and envelopes Sheet feeder (optional), 1- or 2-bin Continuous sheets Push tractor — standard Pull tractor — optional
Paper Width	With single sheet guide: 11.4 to 421.6 mm (4.5 to 16.6 in.) With sheet feeder: 127.0 to 421.6 mm (5.0 to 16.6 in.) With push or pull tractor: 127.0 to 406.4 mm (5.0 to 16.0 in.)
Dimensions	
P62	Width: 460.0 mm (18.1 in.) Depth: 380.0 mm (15.0 in.) Height: 167.0 mm (6.6 in.)
P72	Width: 600.0 mm (23.6 in.) Depth: 380.0 mm (15.0 in.) Heigth: 167.0 mm (6.6 in.)
Weight	
P62 P72	11.0 kg (24.3 lb) 14.0 kg (30.9 lb)

Table 1-4 Specifications (cont'd)

ITEM	SPECIFICATION
Interface	Industry-standard parallel — standard RS-232C serial — optional
Emulation	NEC Pinwriter Level 2, Epson LQ series, IBM X24E/XL24E
Power Consumption	115 V model — 162 W/248 VA with 33% duty data 230 V model — 173 W/262 VA with 33% duty data
BTU Rating	590 BTU with 33% duty data
Power Requirements	220 to 240 Vac ±10%, 50/60 ±1 Hz
Environmental Conditions	Operating temperature — 41° to 100°F (5° to 38°C) Operating humidity — 30% to 85% RH (noncondensing) (45% to 70% RH with sheet feeder) Storage temperature — minus 13° to 140°F (minus 25° to 60°C) Storage humidity — 10% to 90% RH (non condensing)
Print Head Life	200 million dots/wire
Reliability	MTBF — 6000 hours MTTR — 20 minutes
Acoustic Noise	54 dBA
Administrative Compliance	VDE 0805 (EN 60 950) VDE 0871 Class B SETI NEMKO

Section 2

Setup and Check



This section provides information on printer setup and check, including unpacking, assembly, and cable connections. Instructions on loading paper and running printer tests are included. The printer self-tests can be used as a confidence check of printer operation, before performing services or as a check after performing service.

UNIT SETUP

Printer operation and print quality are affected by the environment. To maintain the best conditions for trouble-free operation, observe the following environmental standards. Unit requirements and media specifications are in Section 1.

- Temperature: 41° to 100°F (5° to 38°C)
- Humidity: 30 to 70%
- Place the printer in a well-ventilated, air-conditioned area.
- Make sure the printer fan ventilation holes are not blocked. A minimum of six inches is the recommended clearance from any wall for ventilation and accessibility.
- Do not expose the printer to direct sunlight or extreme changes in temperature.
- Do not expose the printer to excessive dust, moisture, vibration, shock, chemicals, or chemical vapors (such as ammonia vapors from blue print machines).
- Place the printer away from devices that generate strong magnetic fields such as electronic motors or transformers.

Unpacking

Place the carton on a sturdy surface, and carefully unpack the printer (see Figure 2-1). As the printer is unpacked, remove all shipping restraints (carrier restraint and tape on top front cover and sheet guide). Locate each of the items shown in Figure 2-2. When packing the printer for shipping or storage, pack the removed items in reverse order.

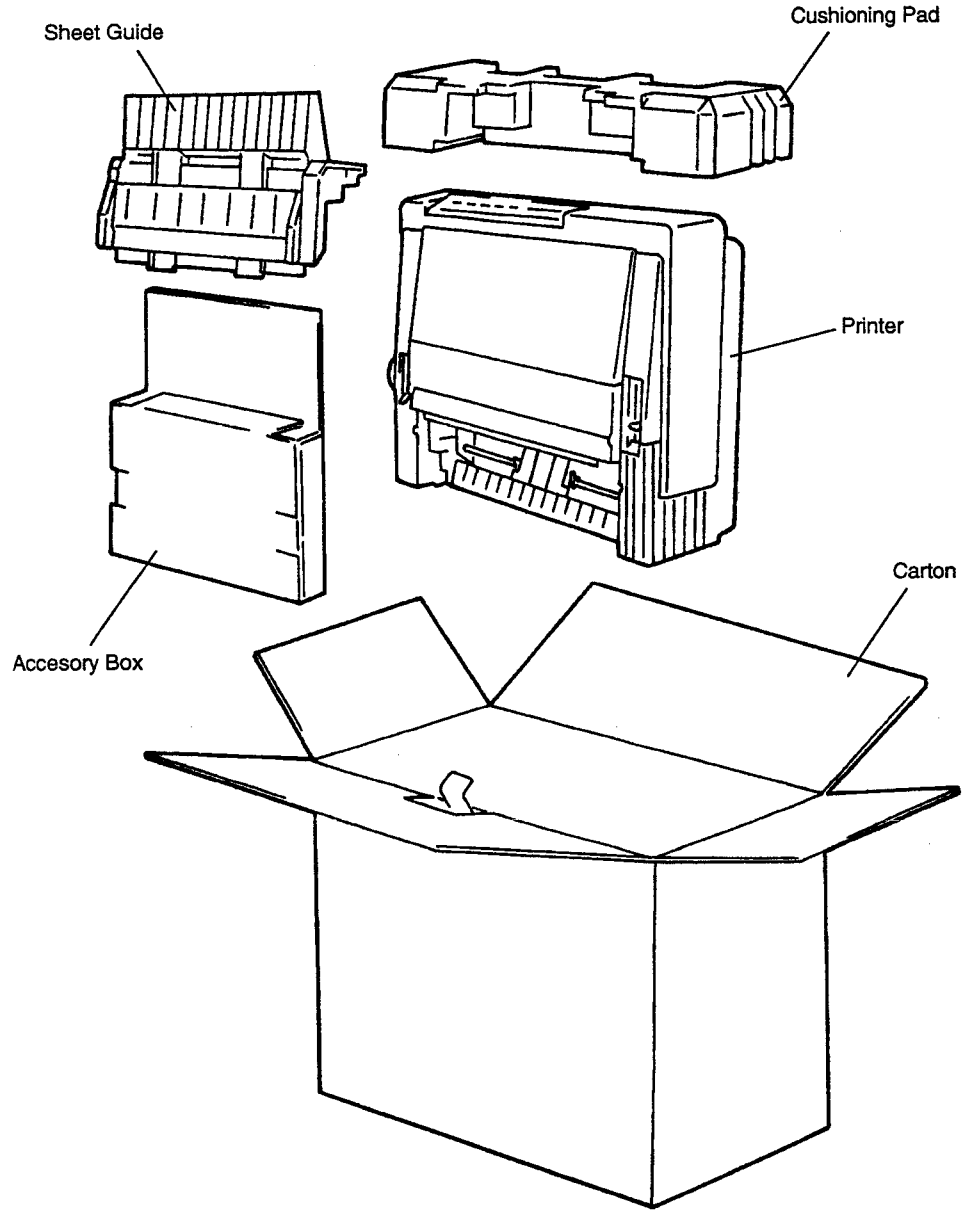


Figure 2-1 Printer Shipping Package

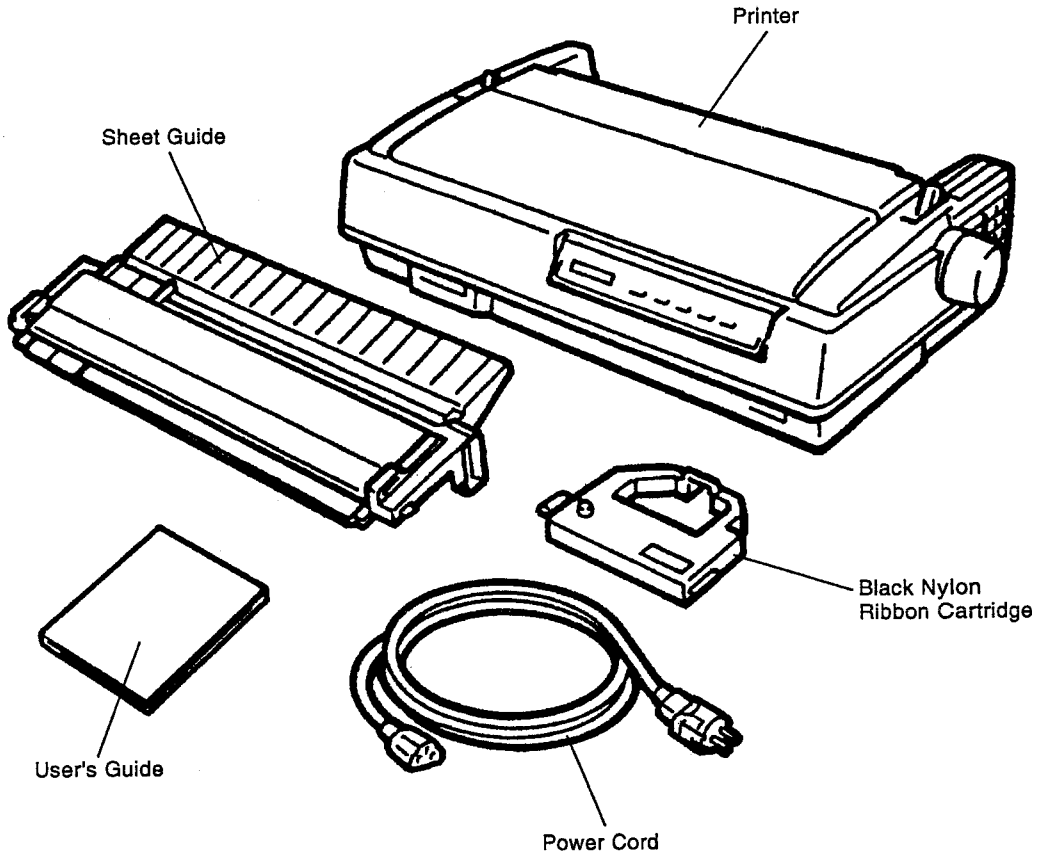


Figure 2-2 Printer and Accessories

Installing the Ribbon Cartridge

Install the ribbon cartridge as follows (see Figure 2-3).

1. Move the paper thickness setting lever to the front of the printer.
2. Open the top cover, and position the carrier at the center of the printer.
3. Turn the ribbon feed knob on the cartridge in the direction of the arrow to tighten the ribbon.
4. Place the tabs on the sides of the ribbon cartridge into the corresponding slots on the carrier holder.
5. Check that the cartridge ink ribbon is between the card holder and the print head.
6. Gently press down on the ribbon cartridge until it snaps into place on the carrier. Turn the ribbon feed knob counterclockwise slightly to ensure proper seating.

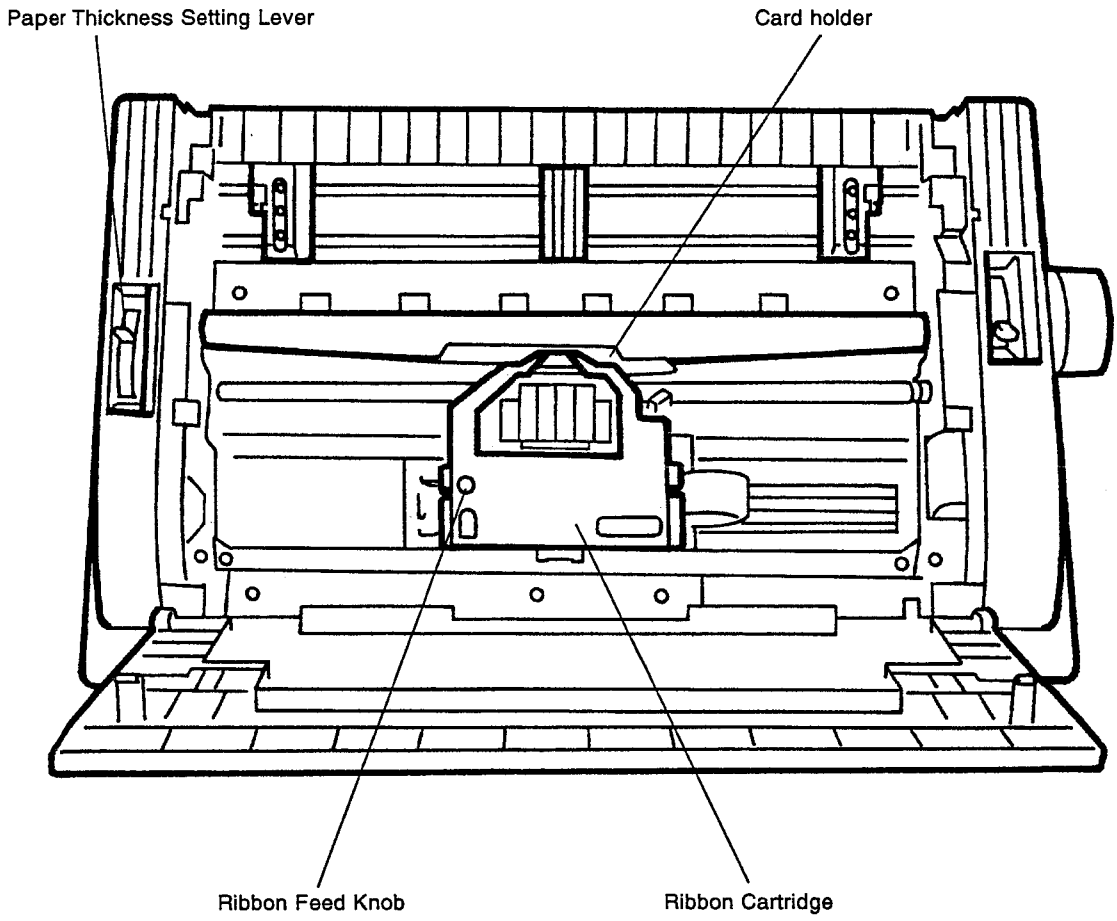


Figure 2-3 Ribbon Cartridge

Installing the Sheet Guide

Install the sheet guide as follows.

1. Insert the left and right tabs of the sheet guide into the slots on the printer middle cover (see Figure 2-4).
2. Make sure the sheet guide stands as shown in Figure 2-5.

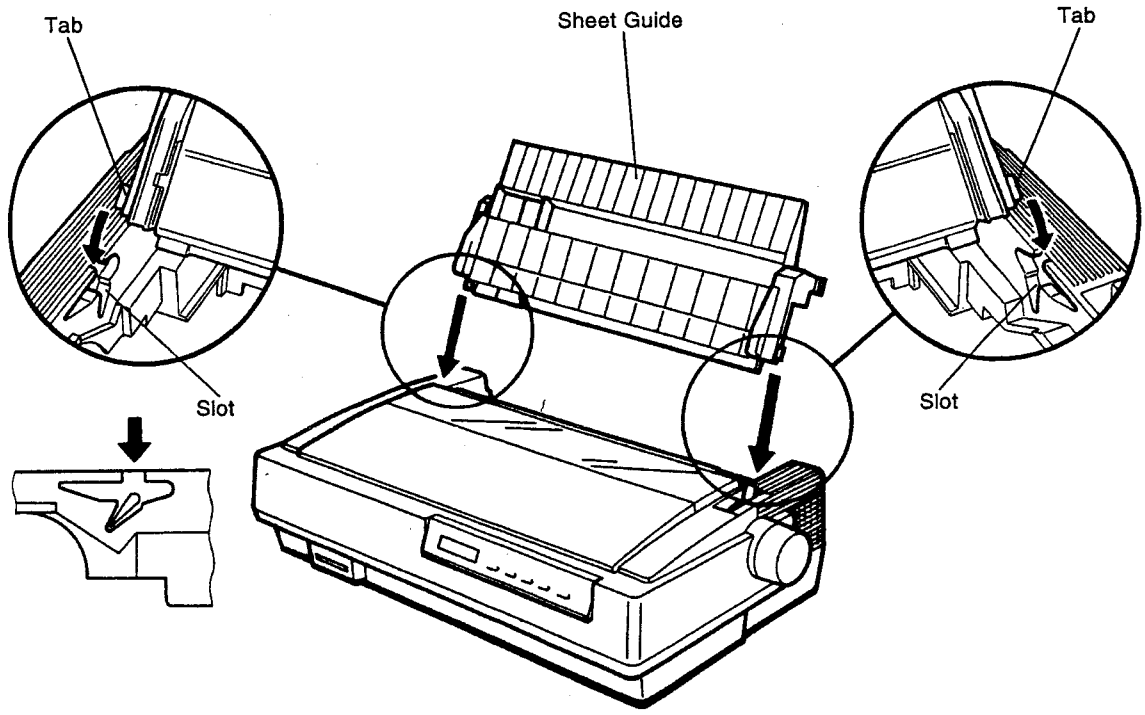


Figure 2-4 Sheet Guide Installation

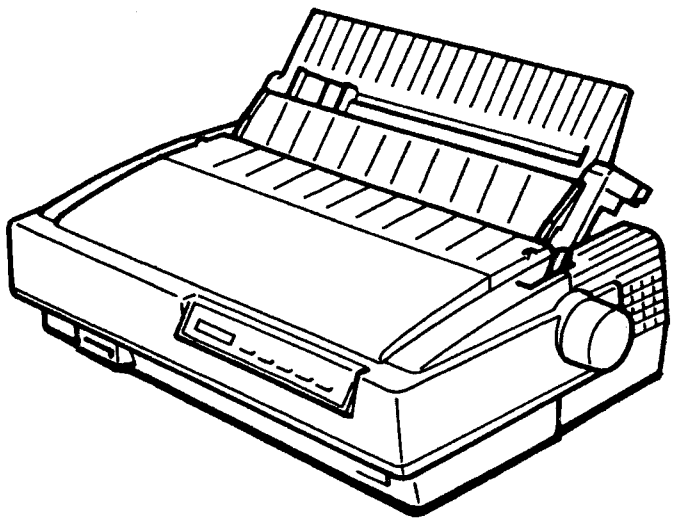


Figure 2-5 Sheet Guide Position for Cut Sheets

Connecting the Power and Interface Cables

Connect the power and interface cables as follows (see Figure 2-6).

1. Check that the ribbon cartridge is installed, and that the print head shipping restraint is removed.
2. Check that the printer's power switch is OFF.
3. Plug the power cable into the back of the printer.
4. Plug the other end of the power cable into a properly grounded outlet.
5. Determine which interface (standard parallel or optional serial) is in use, then plug the appropriate interface cable into the back of the printer and computer.
6. Check that both cables are properly seated and secure. If a ground wire is attached to the interface cable, secure the wire to the ground screw on the printer.
7. Set the interface operating, parameters (see Section 3 and the User's Guide).

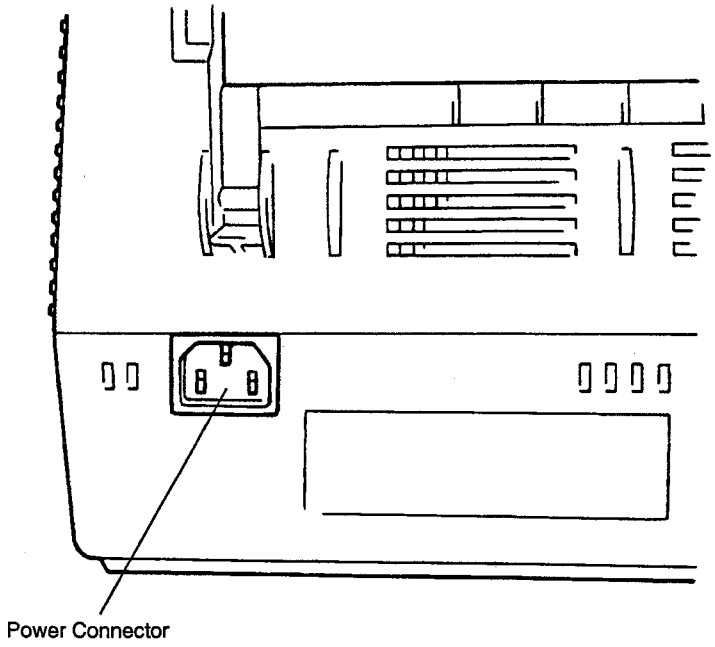


Figure 2-6 Power Connector

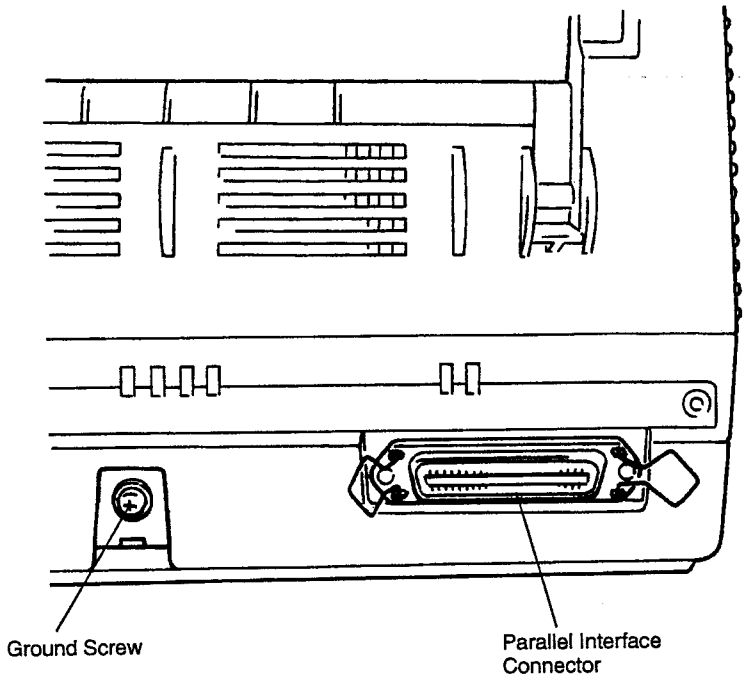


Figure 2-7 Parallel Interface Connector

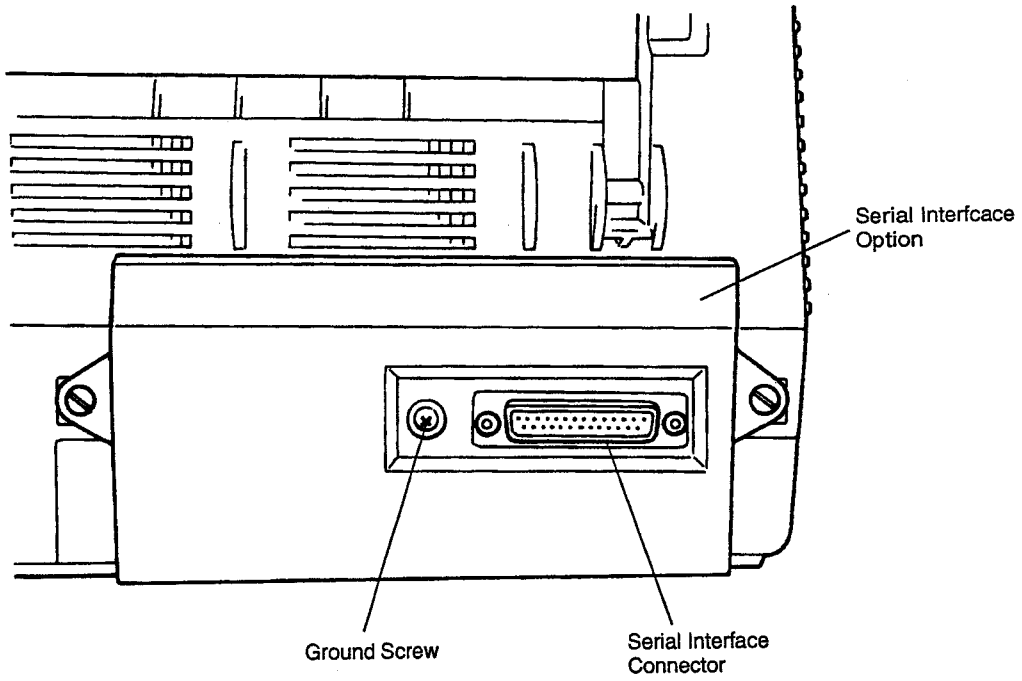


Figure 2-8 Serial Interface Connector

UNIT CHECK

The printer self-test exercises the electromechanical subsystem of the printer, checks operation of the print head wires, provides a visual check of print quality through printout of preprogrammed test patterns, and checks operation of the interface circuits through a hex dump. The test patterns are a repetitive display of the printable characters in the ASCII character set.

The self-test is designed as a confidence check of printer operation, and when successfully concluded indicates that the printer's subsystems are functioning properly.

Printer Self-Tests

The printer has three self-tests that provide a quick check of printer operation. These include a power-on test, print quality and print head check, and hex dump for checking the interface circuits. If any of the self-tests fail at any time or do not give the expected results, see Section 5 Troubleshooting. The following paragraphs explain the tests.

POWER-ON TEST

The power-on test checks that power is available to the printer and that there are no malfunctions in the power circuit. Perform the test as follows.

1. Check that the power switch is OFF, power cable connected, ribbon cartridge installed, print head restraint removed, and the top cover closed.
2. Turn on the printer. The POWER indicator will light and the printer head will home to the left. The lit indicator shows that power is available to the printer.

   Homing of the print head indicates that the printer's electronics are operating. If the indicator does not light or the print head does not home, see Section 5 Troubleshooting.

   NOTE

   The LCD will display "PAPER OUT" until paper is loaded (see the User's Guide for paper loading). For other displayed codes, see Section 3 (status codes) and Section 5 (error codes).

3. Turn off the printer.

PRINT HEAD AND PRINT QUALITY CHECK

This self-test shows if the individual print wires are printing and demonstrates print quality by printing out a test pattern for visual observation. Figure 2-9 shows a partial sample test printout. Perform the test as follows:

1. Check that the power cable is connected, ribbon cartridge installed, paper loaded, top cover closed, and power switch OFF.

2. Press and hold down **LF** while turning on the printer. Release **LF** when printing start.

   If printing does not start, check that the top cover is closed. If printing still does not start, turn off the printer, check that power is available, and repeat the test. If printing still does not start, see Section 5 Troubleshooting.

3. Allow the test to print out a full page. Insert a second sheet of paper into the printer when the "PAPER OUT" appears on the LCD. Printer feeds the paper and resumes the printing automatically. Follow with a third sheet. A complete self-test printout requires three sheets.

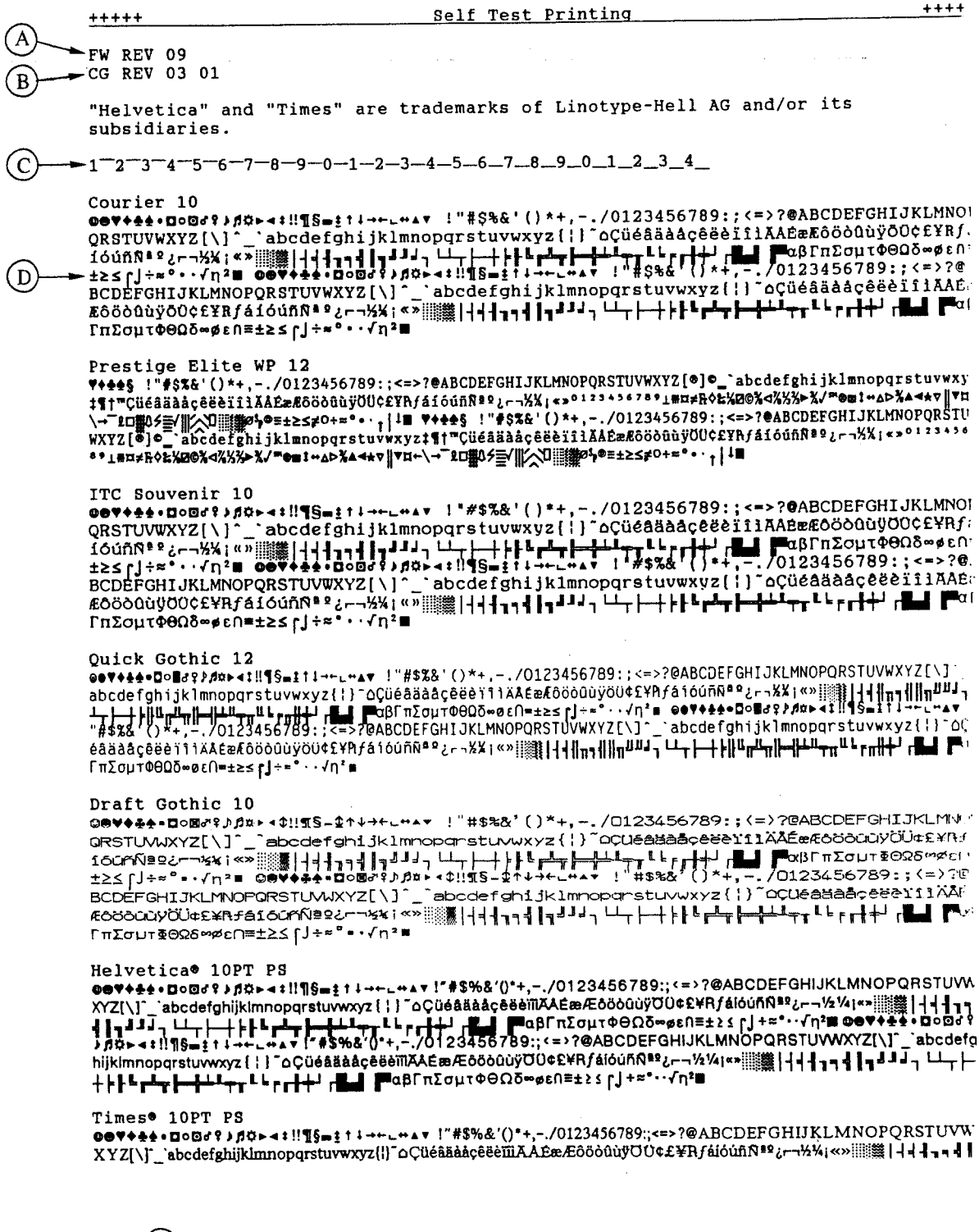
4. Stop the self-test at any time by turning off power. The self-test can also be turned off by pressing **SELECT**. However, the test will resume when **SELECT** is again pressed.

5. Visually check the first sheet. The first four lines identify the printer model, firmware revision level, character generator revision level, and memory switch settings.

   The print head test line shows a series of printed numbers separated by dashes. Each number represents one wire of the 24-pin print head. The dash after each number shows if the wire is printing or not: no dash indicates the wire is not printing. If a wire(s) is not printing, see Section 5 Troubleshooting.

6. Check the print quality of the test pattern. If print is too light or dark, adjust the paper thickness setting level. If there are missing dots, broken characters or other problems, see Section 5 Troubleshooting.

If the print head test and test pattern printed out correctly, all subsystems are operating properly. If the test failed, see Section 5 Troubleshooting.



(A) Firmware Revision Level

(B) Character Generator Revision Level

(C) Print Head Test Pattern

(D) Self-Test Output

Figure 2-9 Self-Test Printout

HEX DUMP

The hex dump verifies that the interface circuits are operating correctly. The hex dump is also useful for program debugging. This feature makes it easy for experienced users to find the cause of printer problems.

The hex dump prints out, in hexadecimal notation, every ASCII character (including control characters) sent to the printer. The firmware revision of the system board is also printed out at the top of the page.

To perform a hex dump, follow these steps.

1. Check that the power and interface cables are connected, paper loaded, and the power switch is on. Check that the printer is set for parallel or optional serial interface operation (see Section 3).

2. Using a word processor or other software package, create several lines of text that include the feature which is giving you problems. In this example, we will use the underlining function.

3. Exit the software package and turn off the printer power.

4. Hold down **LOAD** while turning on the printer.

   The printer enters the hex dump mode.

5. The computer now sends your lines of text to the printer, which in turn prints out the data in hexadecimal form. Check the hex codes to see if the underlining code appears.

   Try to find the underlining codes (hexadecimal code: 1B 2D) among the hex codes in the printout (see Figure 2-10).

6. If the underlining hex code appears, the software is doing its job and the problem is the printer.

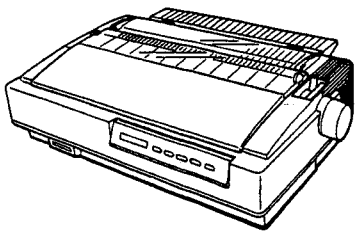
   If the underlining hex code does not appear, you have a software problem and should see your software dealer.

```
FW REV 09
CG REV 03 01
1B 2D 01 20 21 22 23 24 25 26 27 28 29 2A 2B 2C     .-. !"#$%&'()*+,
2D 2E 2F 30 31 32 33 34 35 36 37 38 39 3A 3B 3C     -./0123456789:;<
3D 3E 3F 40 41 42 43 44 45 46 47 48 49 4A 4B 4C     =>?@ABCDEFGHIJKL
4D 4E 4F 50 51 52 53 54 55 56 57 58 59 5A 5B 5C     MNOPQRSTUVWXYZ[\
5D 5E 5F 60 61 62 63 64 65 66 67 68 69 6A 6B 6C     ]^_`abcdefghijkl
6D 6E 6F 70 71 72 73 74 75 76 77 78 79 7A 7B 7C     mnopqrstuvwxyz{|
7D 7E 0D 0A                                        }~..
```

Figure 2-10 Sample Hex Dump

Section 3

Operation



This section identifies the control panel buttons, status messages, attendance messages, menu mode, and secret mode for Pinwriter P62/P72 printer. The control panel is on the front of the printer. The liquid crystal display (LCD) on the control panel shows the status and attendance messages. The menu is also viewed on the display. Select the parameters settings to meet the printing does not contain any circuit board switches.

CONTROLS AND INDICATORS

Figure 3-1 shows the printer's control panel. Explanations of each button and indicator follow. Table 3-1 summarizes control panel operation.

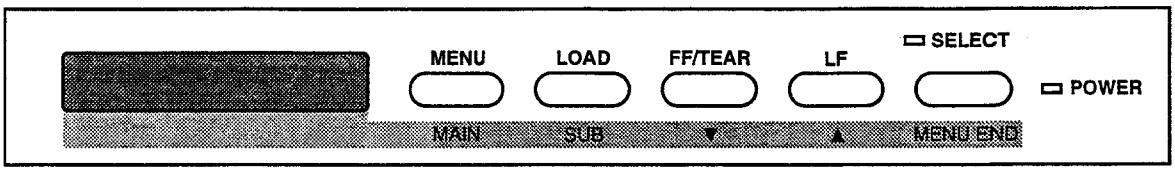


Figure 3-1 Control

POWER indicator — This LED is lit whenever the printer power is ON.

SELECT indicator — This LED is lit when the printer is online.

SELECT button — Used to select and deselect the printer for printing.

MENU END button — In the menu mode, use to save the new settings and exit out of the menu mode.

LF button — Used to advance the paper either one line (press the button once) or form feed (press the button and hold it for one second). LF is also used in combination with other buttons and POWER switch to permits initiating the special function (see Table 3-1).

▼ (down-arrow symbol) **button** — In the menu mode, press to display the next selection on that level.

FF/TEAR button — Used to advance the paper to the tear position in online state. Press to form feed in offline state.

▲ (up-arrow symbol) **button** — In the menu mode, press to display the previous selection on that level.

LOAD button — Used to automatically load single or continuous sheets to the first printing position. Also used to back continuous sheets off the platen (park continuous paper) while using single sheets.

SUB button — In the menu mode, press to display the sub menu item.

MENU button — Used to enter the menu mode. **MENU** is also used in combination with POWER switch to allow user/language selection.

MAIN button — In the menu mode, press to display the main menu item.

LCD display — The LCD allows user to monitor the following printer states:

- the unprocessed remaining data amount in the printer buffer (in offline state),
- font style,
- pitch,
- forms handling state,
- menu messages,
- status messages,
- attendance messages, and
- error messages.

Table 3-1 Control Panel Summary

FUNCTION	BUTTON OPERATION
Select/deselect printer	**SELECT**
Advance paper	**FF/TEAR** (while offline status)
Initialize (reset) printer	**SELECT** + **LF** + **FF/TEAR**
Adjust first print position	**SELECT** + **LF**
Start self-test	**LF** + POWER switch
Start hex dump	**LOAD** + POWER switch
Advance paper to tear position	**FF/TEAR** (while online status)
Load continuous or single sheet	**LOAD**
Park continuous paper	**LOAD**
Enter menu mode	**MENU**
Select user/language	**MENU** + POWER switch
Save and exit menu mode	**MENU END**

Status Messages

Table 3-2 lists and defines the status messages that appear in the control panel's display and their definitions. Attendance messages are described later in this section. See Section 5 for the error messages.

Table 3-2 Status Messages (1/2)

DISPLAY MESSAGE	DEFINITION
REMAINING DATA XX.X K BYTES	Printer is offline. Printer has unprocessed xx.x K bytes data in the buffer.
COURIER 10 CPI CSG	Printer is ready to operate with Courier 10 cpi and CSG (cut sheet guide) installed. Selected type style is displayed on upper side as • COURIER • ITC SOUVENIR • PRESTIGE ELITE • QUICK GOTHIC • DRAFT GOTHIC • HELVETICA • TIMES • BOLD • type style name of inserted font card Selected pitch of the type style is displayed on lower left side as • 10 CPI • 12 CPI • 15 CPI • 17 CPI • 20 CPI • PS (proportional spacing) • PS CND (proportional spacing and condensed) Selected forms handling option is displayed on lower right side as • CSG (cut sheet guide) • PUSH TR (push tractor) • CSF BIN1 (single bin sheet feeder or bin 1of dual bin sheet feeder) • CSF BIN2 (dual bin sheet feeder) • CSF SLOT (manual slot of single/dual bin sheet feeder) • BD TR (bidirectional tractor) • BOTTOM (pull tractor by bottom feed)
PLEASE TEAR OFF	Continuous sheets have advanced to the tear position. The paper returns to the printing position after eight seconds, or as soon as your computer sends additional print data to the printer.

Table 3-2 Status Messages (2/2)

DISPLAY MESSAGE	DEFINITION
FINE ADJUST MODE	Printer is in fine adjust mode. You can adjust the load position of your single sheet or continuous paper.
TEST PRINT MODE	Printing a test page.
HEX DUMP MODE	Printer is in hex dump mode.
INITIALIZING	Printer is powered on or in initializing.
MEMORIZING	Printer is memorizing the menu settings or first print position into EEPROM.

ATTENDANCE MESSAGES

Table 3-3 lists printer attendance messages and corresponding correcting actions. These messages halt any print operations and require some type of operation intervention. If these messages appear, correct the malfunction and select the printer. Then printer resumes normal operation without losing the data in the buffer. Error messages are described in Section 5.

Table 3-3 Attendance Messages (1/2)

MESSAGES	MEANING	CORRECTIVE ACTION
COVER OPEN	Top cover is open.	Close the top cover and press **SELECT**.
PAPER OUT	Printer is out of paper.	Load paper and press **SELECT**.
PAPER JAM	Paper jam or paper loading error with the sheet feeder installed.	Remove jammed paper or press **FF/TEAR**.
	The printer fail to detect the paper width when paper width detection feature is enabled.	Remove jammed paper or press **FF/TEAR**.
RIBBON END	Multistrike ribbon cartridge is empty.	Replace ribbon cartridge and press **SELECT**.
MSR & COPY MODE	Printer is in the copy mode with multistrike ribbon installed.	Set the paper thickness setting lever at 4 or lower-numbered position and press **SELECT**. If the print results are unsatisfactory, reset the paper thickness setting lever at 5 or higher-numbered position. Then press both **SELECT** and **MENU** simultaneously.
DOWN LOAD ERROR	Downloading data came but printer is not able to receive it.	Change buffer capacity to 48KB or 256B by menu setting or press **SELECT**.
BUFFER OVER FLOW	Serial interface buffer overflow.	Press **SELECT**.
BUFFER IS SMALL	Too much data (raster graphics) was received from computer than can be stored in the printer buffer.	Change buffer capacity to 80KB or 48KB by menu setting or press **SELECT**.

Table 3-3 Attendance Messages (2/2)

MESSAGES	MEANING	CORRECTIVE ACTION
OUT OF RANGE	When the paper width detection feature is enable, the printer prints out of the paper.	Press **SELECT**.
P/H OVER HEAT	Print head overheated.	Printing resumes automatically when print head cools.

MENU MODE

The menu mode is used to access the memory switches that control the printer's six memory modes:

- print mode
- format
- paper handling
- interface
- RS-232C/V24
- print accuracy

The menu mode also allows printout of all current switch settings, and resetting the printer. The menu mode allows up to three users to store individual settings in printer memory. This avoids the inconvenience of resetting the parameters in multi-user situations.

Each memory mode is accessed through the main menu as explained below. Figure 3-2 shows the menu tree and Table 3-4 lists the memory modes and their factory settings. Detailed information on the modes is contained in the printer User's Guide.

Entering the Menu Mode

To enter the menu mode, follow these steps.

1. Hold down the **MENU** button while turning on the printer. "USER SELECTION USER 1" appears on the LCD indicator.
2. By pressing ▲ button or ▼ button repeatedly, the categories "USER 2" and "USER 3" appear. When the desired category appears on the LCD indicator, press the **MENU** button.
3. The printer will enter the Language Setting Menu, and the LCD indicator displays "DISPLAY LANGUAGE ENGLISH."
4. By pressing ▲ button or ▼ button repeatedly, the message languages"GERMAN," "FRENCH," "ITALY," and "SPANISH" appear.

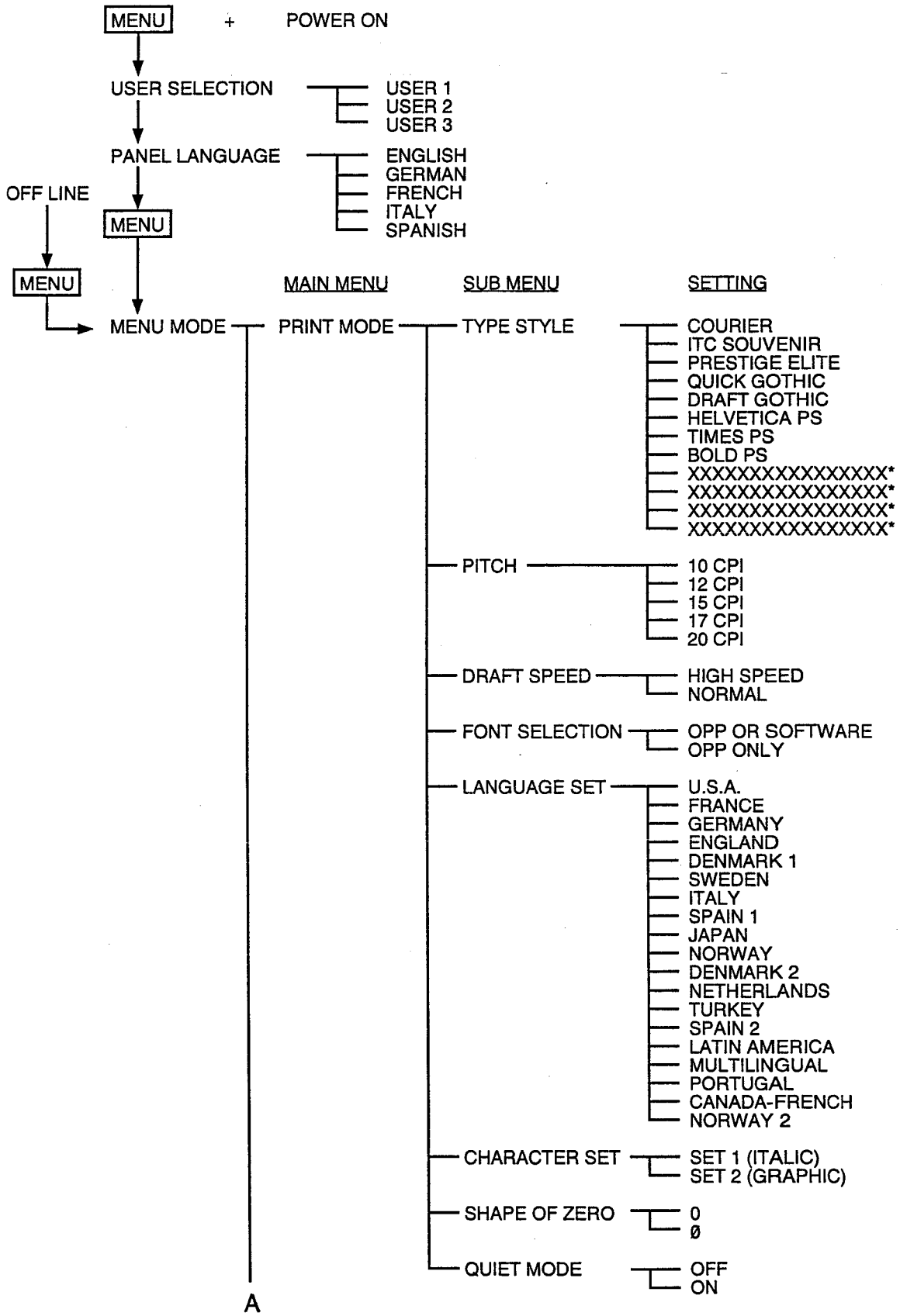
   When the desired language appears, press the **MENU** button.
5. The printer will enter the menu mode and the LCD indicator displays "MAIN MENU PRINT MODE"

If you don't need to change the user category and the message language on the LCD display, simply press the **MENU** button in offline state.

Using the Control Panel

Use the following five control panel buttons to make your menu selection.

- **MAIN** button – Press to display the main menu.
- **SUB** button – Press to display the sub menu.
- ▼ button – Press to display the next selection on that level.
- ▲ button – Press to display the previous selection on that level.
- **MENU END** button – Press to exit the menu mode.



* Appears only when the optional font card is installed.

Figure 3-2 Menu Tree (1/4)

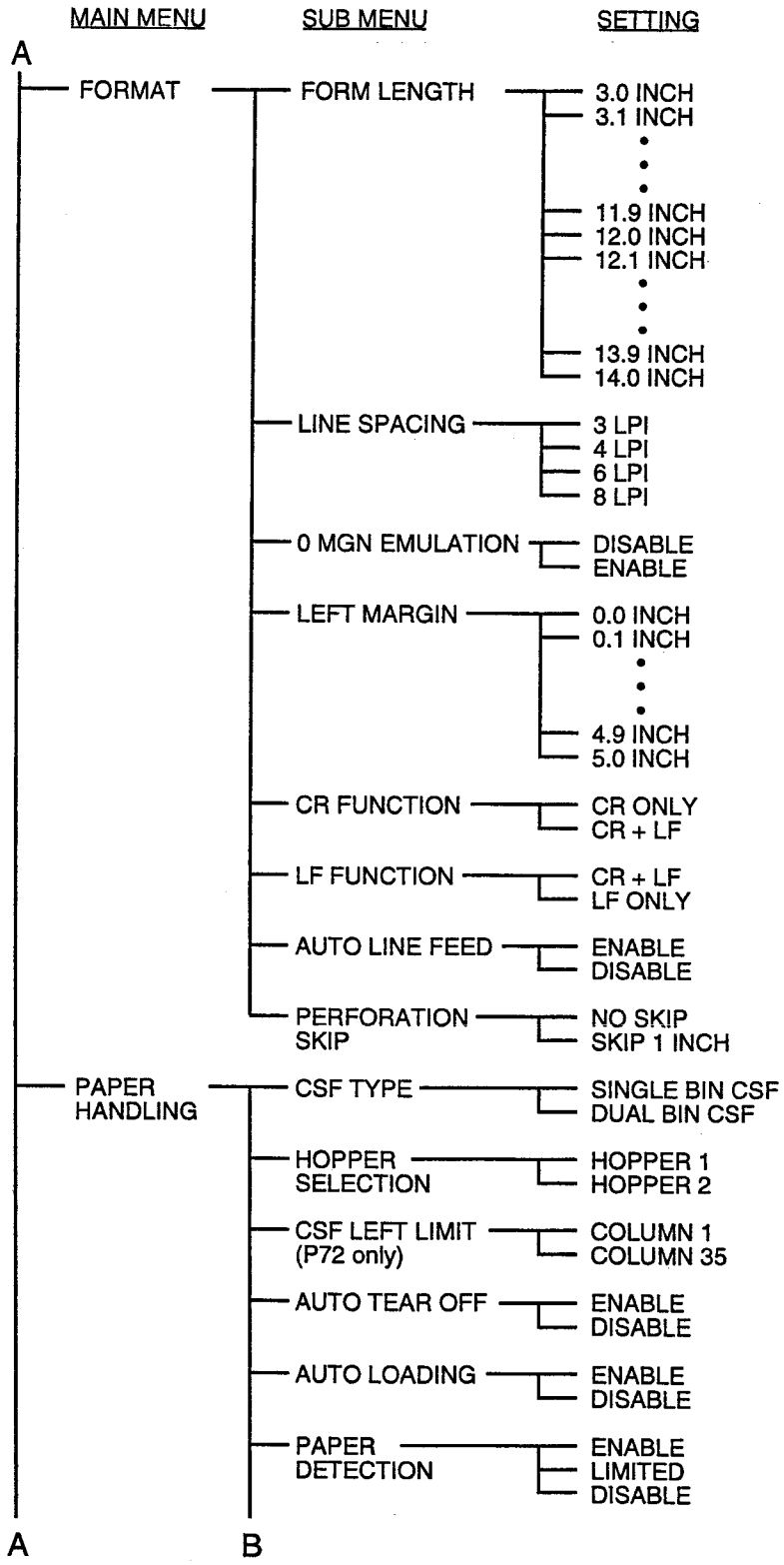


Figure 3-2 Menu Tree (2/4)

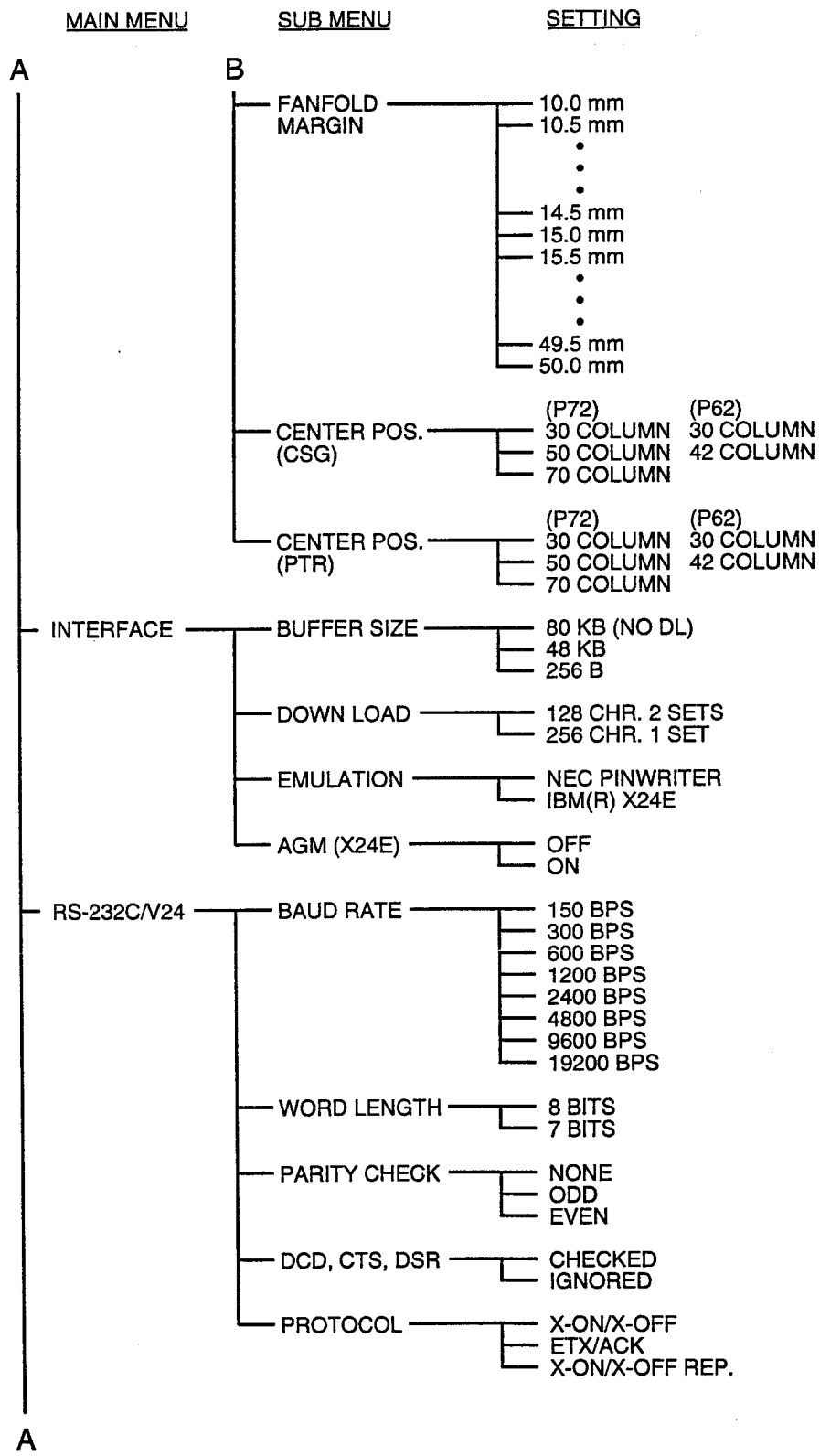


Figure 3-2 Menu Tree (3/4)

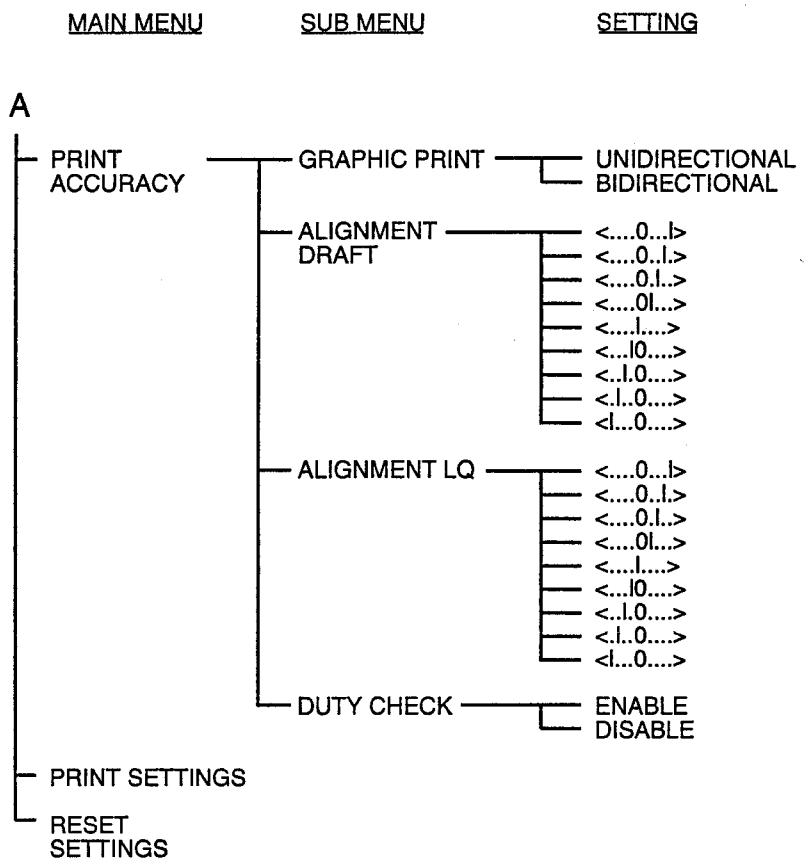


Figure 3-2 Menu Tree (4/4)

Table 3-4 Factory Memory Switch Settings (1/2)

MEMORY SWITCH	SETTINGS	
Print Mode		
Type Style	Courier	
Pitch	10 cpi	
Draft Speed	High Speed	
Font Selection	Operator panel or Software	
Language Set	U.S.A.	
Character Set	Set 2 (Graphic)	
Shape of Zero	0	
Quiet Mode	Off	
Format		
Form length	12.0 inch	
Line Spacing	6 lpi	
0 Margin Emulation	Disable	
Left Margin	0.0 inch	
CR function	CR only	
LF function	CR + LF	
Auto line feed	Enable	
Perforation Skip	No Skip	
Paper Handling		
Cut Sheet Feeder Type	Single Bin CSF	
Hopper Selection	Hopper 1	
CSF Left Limit	Column 1 (P72 only)	
Auto Tear Off	Disable	
Auto Loading	Enable	
Paper Detection	Enable	
Fanfold Margin	13.5 mm	
Centre POS (CSG)	P72: column 70	P62: column 42
Centre POS (PTR)	P72: column 70	P62: column 42
Interface		
Buffer Size	80 KB (No DL)	
Down Load	128 chr, 2 sets	
Emulation	Pinwriter	
AGM (X24E)	Off	
RS-232C/V24		
Baud Rate	9600 bps	
Word Length	8 bits	
Parity Check	None	
DCD, CTS, DSR	Checked	
Protocol	X-on/X-off	

Table 3-4 Factory Memory Switch Settings (2/2)

MEMORY SWITCH	SETTINGS
Print Accuracy	
Graphic Print	Unidirectional
Alignment Draft	<....I....>
Alignment LQ	<....I....>
Duty Check	Enable

SECRET MODE

Replacement mother boards are manufactured for use in the either printer model. However, after replacing the board, the board's EEPROM must be checked and reset as necessary to match the various printer's functions.

Use the secret mode to access the hidden EEPROM memory switches. The EEPROM memory switches allow you to control the printer's function which cannot be set by the menu mode.

Memory Switch Descriptions

Table 3-5 describes the secret mode switches. Note that there are 30 switches (S1 through S30) on the menu, and that each switch has eight subswitches. The factory settings are underlined.

CAUTION

Information contained in this section shall not be released to users without prior consultation with technical staff menbers.

Table 3-5 Secret Mode Switches (1/6)

SWITCH	FUNCTION	SETTINGS
S1-1	Printer model	1: E2 (P62) 0: E3 (P72)
S1-2 S1-3 S1-4	Panel language (see Table 3-6)	
S1-5 S1-6	Use selection (see Table 3-7)	
S1-7 S1-8 S2-1	Not used.	1: 0:
S2-2 S2-3	Reserved for future use.	1: 0:
S2-4	Test print mode	1: Fixed 0: Auto
S2-5	SP homing	1: Disable 0: Enable
S2-6	Aging mode	1: Aging mode 0: Normal mode
S2-7 S2-8	Not used.	1: 0:
S3-1	Communication test	1: Enable 0: Disable
S3-2	Relation of SCR and DTR signals	1: Independent 0: Out SCR to DTR
S3-3 S3-4	Parity check (see Table 3-8)	
S3-5	Word length	1: 7 bits 0: 8 bits
S3-6 S3-7 S3-8	Baud rate (see Table 3-9)	
S4-1 S4-2	Buffer capacity of RS-232C board (see Table 3-10)	
S4-3 S4-4	Communication protocol (see Table 3-11)	
S4-5	Reverse channel polarity	1: Low 0: High
S4-6	Break signal	1: Disable 0: Enable
S4-7	Reserved for future use.	1: 0:
S4-8	DCD, CTD, DSR signals	1: Ignored 0: Checked

Table 3-5 Secret Mode Switches (2/6)

SWITCH	FUNCTION	SETTINGS
S5-1 S5-2 S5-3 S5-4 S5-5 S5-6 S5-7 S5-8	Not used.	1: 0:
S6-1	Graphic print direction	1: Bidirectional 0: Unidirectional
S6-2	Duty check	1: Disable 0: Enable
S6-3 S6-4	Not used.	1: 0:
S6-5	Print energy control	1: Enable 0: Disable
S6-6	Print impact force	1: Reduced 0: Normal
S6-7	Print head initial drive control	1: Enable 0: Disable
S6-8	Print impact force menu	1: Enable 0: Disable
S7-1 S7-2 S7-3 S7-4	Horizontal alignment in HS-10/-12, Draft-10/-12, 80-dpi dot modes (see Table 3-12)	
S7-5 S7-6 S7-7 S7-8	Horizontal alignment in LQ, PS, PS-CND, HS-LQ, DR-15/-17/-20, 90-/120-/180-/240-/360-dpi dot modes (see Table 3-13)	
S8-1 S8-2 S8-3 S8-4	Horizontal alignment for factory setting in draft mode with fabric black ribbon (see Table 3-14)	
S8-5 S8-6 S8-7 S8-8	Horizontal alignment for factory setting in LQ mode with fabric black ribbon (see Table 3-15)	
S9-1 S9-2 S9-3 S9-4	Horizontal alignment for factory setting in draft mode with fabric color ribbon (see Table 3-16)	
S9-5 S9-6 S9-7 S9-8	Horizontal alignment for factory setting in LQ mode with fabric color ribbon (see Table 3-17)	
S10-1 S10-2 S10-3 S10-4	Horizontal alignment for factory setting in draft mode with multistrike ribbon (see Table 3-18)	

Table 3-5 Secret Mode Switches (3/6)

SWITCH	FUNCTION	SETTINGS
S10-5 S10-6 S10-7 S10-8	Horizontal alignment for factory setting in LQ mode with multistrike ribbon (see Table 3-19)	
S11-1 S11-2 S11-3 S11-4 S11-5 S11-6 S11-7 S11-8	First print position with cut sheet guide (see Table 3-20)	
S12-1 S12-2 S12-3 S12-4 S12-5 S12-6 S12-7 S12-8	First print position with pull tractor (see Table 3-21)	
S13-1 S13-2 S13-3 S13-4 S13-5 S13-6 S13-7 S13-8	First print position with cut sheet feeder (see Table 3-22)	
S14-1 S14-2 S14-3 S14-4 S14-5 S14-6 S14-7 S14-8	Tear-off position (see Table 3-23)	
S15-1 S15-2 S15-3 S15-4 S15-5 S15-6 S15-7 S15-8	Not used.	1: 0:
S16-1 S16-2 S16-3 S16-4	Type style at power-up (see Table 3-24)	
S16-5	Not used.	1: 0:
S16-6 S16-7 S16-8	Spacing pitch (see Table 3-25)	

Table 3-5 Secret Mode Switches (4/6)

SWITCH	FUNCTION	SETTINGS
S17-1	Draft speed	1: High speed 0: Normal
S17-2	Font selection	1: OPP only 0: OPP & Software
S17-3	Not used.	1: 0:
S17-4 S17-5 S17-6 S17-7 S17-8	Language character set (see Table 3-26)	
S18-1	Character set	1: Set 2 (Graphic) 0: Set 1 (Italic)
S18-2	Shape of zero	1: 0 with slash 0: 0 without slash
S18-3	Quiet mode	1: On 0: Off
S18-4	Font mode	1: Thai 0: Standard
S18-5 S18-6 S18-7 S18-8 S19-1 S19-2 S19-3	Not used.	1: 0:
S19-4 S19-5 S19-6 S19-7 S19-8	Thai character set (see Table 3-27)	
S20-1 S20-2 S20-3 S20-4 S20-5 S20-6 S20-7 S20-8 S21-1 S21-2 S21-3 S21-4 S21-5 S21-6 S21-7 S21-8	Form length (see Table 3-28)	
S22-1 S22-2	Line spacing (see Table 3-29)	
S22-3	0 margin emulation	1: Enable 0: Disable
S22-4	CR function	1: CR + LF 0: CR only

Table 3-5 Secret Mode Switches (5/6)

SWITCH	FUNCTION	SETTINGS
S22-5	LF function	1: LF only 0: CR + LF
S22-6	Auto line feed at RM	1: Disable 0: Enable
S22-7	Perforation skip	1: Skip 1 inch 0: No skip
S22-8	Not used.	1: 0:
S23-1 S23-2 S23-3 S23-4 S23-5 S23-6 S23-7 S23-8	Left margin (see Table 3-30)	
S24-1	Sheet feeder type	1: 2 bin 0: 1 bin
S24-2	Hopper selection	1: Hopper 2 0: Hopper 1
S24-3	Sheet feeder left margin	1: Column 35 0: Column 1
S24-4	Auto tear-off function	1: Disable 0: Enable
S24-5	Auto loading function	1: Disable 0: Enable
S24-6	Not used.	1: 0:
S24-7 S24-8	Paper detection function (see Table 3-31)	
S25-1 S25-2 S25-3 S25-4 S25-5 S25-6 S25-7 S25-8	Fanfold margin (see Table 3-32)	
S26-1 S26-2	Center position with sheet guide (see Table 3-33)	
S26-3 S26-4	Center position with pull tractor (see Table 3-34)	
S26-5 S26-6 S26-7 S26-8	Not used.	1: 0:
S27-1 S27-2	Buffer capacity (see Table 3-35)	
S27-3	Download characters	1: 256 x 1 set 0: 128 x 2 sets

Table 3-5 Secret Mode Switches (6/6)

SWITCH	FUNCTION	SETTINGS
S27-4	Emulation	1: IBM X24E 0: NEC Pinwriter
S27-5	AGM (X24E)	1: On 0: Off
S27-6 S27-7 S27-8	Not used.	1: 0:
S28-1 S28-2 S28-3 S28-4 S28-5 S28-6 S28-7 S28-8	Reserved for future use.	1: 0:
S29-1 S29-2 S29-3 S29-4 S29-5 S29-6 S29-7 S29-8 S30-1 S30-2 S30-3 S30-4 S30-5 S30-6 S30-7 S30-8	Not used.	1: 0:

Table 3-6 Panel Language

LANGUAGE	SW 1-2	1-3	1-4
English*	0	0	0
Germany	0	0	1
France	0	1	0
Italy	0	1	1
Spain	1	0	0
Reserved for future use	1	0	1
Reserved for future use	1	1	0
Reserved for future use	1	1	1

* Factory setting

Table 3-7 User Selection

USER	SW 1-5	1-6
User 1*	0	0
User 2	0	1
User 3	1	0
User 3	1	1

* Factory setting

Table 3-8 Parity Check

USER	SW 3-3	3-4
None*	0	0
Odd	0	1
Ignored	1	0
Even	1	1

* Factory setting

Table 3-9 Baud Rate

BAUD RATE	SW 3-6	3-7	3-8
1200 bps	0	0	0
19200 bps	0	0	1
4800 bps	0	1	0
300 bps	0	1	1
2400 bps	1	0	0
150 bps	1	0	1
9600 bps*	1	1	0
600 bps	1	1	1

* Factory setting

Table 3-10 Buffer Capacity of RS-232C Board

BUFFER CAPACITY	SW 4-1	SW 4-2
152 bytes	0	0
288 bytes	0	1
560 bytes	1	0
8056 bytes*	1	1

Table 3-11 Communication Protocol

COMMUNICATION PROTOCOL	SW 4-3	SW 4-4
X-on/X-off*	0	0
ETX/ACK	0	1
X-on/X-off repetition	1	0
Non buffer	1	1

* Factory setting

Table 3-12 Horizontal Alignment in HS-10/-12, Draft-10/-12, 80-dpi Dot Mode

HORIZONTAL ALIGNMENT	SW 7-1	SW 7-2	SW 7-3	SW 7-4
F/W-set position*	0	0	0	0
1/360 in. to the right	0	0	0	1
2/360 in. to the right	0	0	1	0
3/360 in. to the right	0	0	1	1
4/360 in. to the right	0	1	×	×
4/360 in. to the left	1	0	×	×
4/360 in. to the left	1	1	0	0
3/360 in. to the left	1	1	0	1
2/360 in. to the left	1	1	1	0
1/360 in. to the left	1	1	1	1

* Factory setting

Table 3-13 Horizontal Alignment in LQ, PS, PS-CND, HS-LQ, DR-15/-17/-20, 90-/120-/180-/240-/360-dpi Dot Mode

HORIZONTAL ALIGNMENT	SW 7-5	7-6	7-7	7-8
F/W-set position*	0	0	0	0
1/360 in. to the right	0	0	0	1
2/360 in. to the right	0	0	1	0
3/360 in. to the right	0	0	1	1
4/360 in. to the right	0	1	×	×
4/360 in. to the left	1	0	×	×
4/360 in. to the left	1	1	0	0
3/360 in. to the left	1	1	0	1
2/360 in. to the left	1	1	1	0
1/360 in. to the left	1	1	1	1

* Factory setting

Table 3-14 Horizontal Alignment for Factory Setting in Draft Mode with Fabric Black Ribbon

HORIZONTAL ALIGNMENT	SW 8-1	8-2	8-3	8-4
F/W-set position*	0	0	0	0
1/360 in. to the right	0	0	0	1
2/360 in. to the right	0	0	1	0
3/360 in. to the right	0	0	1	1
4/360 in. to the right	0	1	0	0
5/360 in. to the right	0	1	0	1
6/360 in. to the right	0	1	1	0
7/360 in. to the right	0	1	1	1
7/360 in. to the left	1	0	0	0
7/360 in. to the left	1	0	0	1
6/360 in. to the left	1	0	1	0
5/360 in. to the left	1	0	1	1
4/360 in. to the left	1	1	0	0
3/360 in. to the left	1	1	0	1
2/360 in. to the left	1	1	1	0
1/360 in. to the left	1	1	1	1

* Factory setting

Table 3-15 Horizontal Alignment for Factory Setting in LQ Mode with Fabric Black Ribbon

HORIZONTAL ALIGNMENT	SW 8-5	8-6	8-7	8-8
F/W-set position*	0	0	0	0
1/360 in. to the right	0	0	0	1
2/360 in. to the right	0	0	1	0
3/360 in. to the right	0	0	1	1
4/360 in. to the right	0	1	0	0
5/360 in. to the right	0	1	0	1
6/360 in. to the right	0	1	1	0
7/360 in. to the right	0	1	1	1
7/360 in. to the left	1	0	0	0
7/360 in. to the left	1	0	0	1
6/360 in. to the left	1	0	1	0
5/360 in. to the left	1	0	1	1
4/360 in. to the left	1	1	0	0
3/360 in. to the left	1	1	0	1
2/360 in. to the left	1	1	1	0
1/360 in. to the left	1	1	1	1

* Factory setting

Table 3-16 Horizontal Alignment for Factory Setting in Draft Mode with Fabric Color Ribbon

HORIZONTAL ALIGNMENT	SW 9-1	9-2	9-3	9-4
F/W-set position*	0	0	0	0
1/360 in. to the right	0	0	0	1
2/360 in. to the right	0	0	1	0
3/360 in. to the right	0	0	1	1
4/360 in. to the right	0	1	0	0
5/360 in. to the right	0	1	0	1
6/360 in. to the right	0	1	1	0
7/360 in. to the right	0	1	1	1
7/360 in. to the left	1	0	0	×
6/360 in. to the left	1	0	1	0
5/360 in. to the left	1	0	1	1
4/360 in. to the left	1	1	0	0
3/360 in. to the left	1	1	0	1
2/360 in. to the left	1	1	1	0
1/360 in. to the left	1	1	1	1

* Factory setting

Table 3-17 Horizontal Alignment for Factory Setting in LQ Mode with Fabric Color Ribbon

HORIZONTAL ALIGNMENT	SW 9-5	9-6	9-7	9-8
F/W-set position*	0	0	0	0
1/360 in. to the right	0	0	0	1
2/360 in. to the right	0	0	1	0
3/360 in. to the right	0	0	1	1
4/360 in. to the right	0	1	0	0
5/360 in. to the right	0	1	0	1
6/360 in. to the right	0	1	1	0
7/360 in. to the right	0	1	1	1
7/360 in. to the left	1	0	0	×
6/360 in. to the left	1	0	1	0
5/360 in. to the left	1	0	1	1
4/360 in. to the left	1	1	0	0
3/360 in. to the left	1	1	0	1
2/360 in. to the left	1	1	1	0
1/360 in. to the left	1	1	1	1

* Factory setting

Table 3-18 Horizontal Alignment for Factory Setting in Draft Mode with Multistrike Ribbon

HORIZONTAL ALIGNMENT	SW 10-1	10-2	10-3	10-4
F/W-set position*	0	0	0	0
1/360 in. to the right	0	0	0	1
2/360 in. to the right	0	0	1	0
3/360 in. to the right	0	0	1	1
4/360 in. to the right	0	1	0	0
5/360 in. to the right	0	1	0	1
6/360 in. to the right	0	1	1	0
7/360 in. to the right	0	1	1	1
7/360 in. to the left	1	0	0	×
6/360 in. to the left	1	0	1	0
5/360 in. to the left	1	0	1	1
4/360 in. to the left	1	1	0	0
3/360 in. to the left	1	1	0	1
2/360 in. to the left	1	1	1	0
1/360 in. to the left	1	1	1	1

* Factory setting

Table 3-19 Horizontal Alignment for Factory Setting in LQ Mode with Multistrike Ribbon

HORIZONTAL ALIGNMENT	SW 10-5	10-6	10-7	10-8
F/W-set position*	0	0	0	0
1/360 in. to the right	0	0	0	1
2/360 in. to the right	0	0	1	0
3/360 in. to the right	0	0	1	1
4/360 in. to the right	0	1	0	0
5/360 in. to the right	0	1	0	1
6/360 in. to the right	0	1	1	0
7/360 in. to the right	0	1	1	1
7/360 in. to the left	1	0	0	×
6/360 in. to the left	1	0	1	0
5/360 in. to the left	1	0	1	1
4/360 in. to the left	1	1	0	0
3/360 in. to the left	1	1	0	1
2/360 in. to the left	1	1	1	0
1/360 in. to the left	1	1	1	1

* Factory setting

Table 3-20 First Print Position with Cut Sheet Guide

FIRST PRINT POSITON	SW 11-1	11-2	11-3	11-4	11-5	11-6	11-7	11-8	HEX EQUIVALENT
44/60 in. backward (5.1 mm)	1	1	0	1	0	1	0	0	D4
43/60 in. backward (5.5 mm)	1	1	0	1	0	0	1	1	D3
42/60 in. backward (5.9 mm)	1	1	0	1	0	0	1	0	D2
•					•				•
•					•				•
•					•				•
Factory-set position) (23.7 mm)	0	0	0	0	0	0	0	0	00
•					•				•
•					•				•
•					•				•
4/60 in. forward (25.4 mm)	0	0	0	0	0	1	0	0	04
5/60 in. forward (25.8 mm)	0	0	0	0	0	1	0	1	05
6/60 in. forward (26.2 mm)	0	0	0	0	0	1	1	0	06

Table 3-21 First Print Position with Pull Tractor

FIRST PRINT POSITON	SW 12-1	12-2	12-3	12-4	12-5	12-6	12-7	12-8	HEX EQUIVALENT
44/60 in. backward (5.1 mm)	1	1	0	1	0	1	0	0	D4
43/60 in. backward (5.5 mm)	1	1	0	1	0	0	1	1	D3
42/60 in. backward (5.9 mm)	1	1	0	1	0	0	1	0	D2
•				•					•
•				•					•
•				•					•
Factory-set position (23.7 mm)	0	0	0	0	0	0	0	0	00
•				•					•
•				•					•
•				•					•
4/60 in. forward (25.4 mm)	0	0	0	0	0	1	0	0	04
5/60 in. forward (25.8 mm)	0	0	0	0	0	1	0	1	05
6/60 in. forward (26.2 mm)	0	0	0	0	0	1	1	0	06

Table 3-22 First Print Position with Cut Sheet Feeder

FIRST PRINT POSITON	SW 13-1	13-2	13-3	13-4	13-5	13-6	13-7	13-8	HEX EQUIVALENT
7/60 in. backward (5.0 mm)	1	1	1	1	1	0	0	1	F9
6/60 in. backward (5.5 mm)	1	1	1	1	1	0	0	0	F8
5/60 in. backward (5.9 mm)	1	1	1	1	0	1	1	1	F7
•				•					•
•				•					•
•				•					•
Factory-set position (8.0 mm)	0	0	0	0	0	0	0	0	00
•				•					•
•				•					•
•				•					•
41/60 in. forward (25.4 mm)	0	0	1	0	1	0	0	1	29
42/60 in. forward (25.8 mm)	0	0	1	0	1	0	1	0	2A
43/60 in. forward (26.2 mm)	0	0	1	0	1	0	1	1	2B

Table 3-23 Tear-Off Position

FIRST PRINT POSITON	SW 14-1	14-2	14-3	14-4	14-5	14-6	14-7	14-8	HEX EQUIVALENT
10/60 in. backward (4.2 mm)	1	1	1	1	0	1	1	0	F6
9/60 in. backward (3.8 mm)	1	1	1	1	0	1	0	1	F5
8/60 in. backward (3.4 mm)	1	1	1	1	0	1	0	0	F4
•				•					•
•				•					•
•				•					•
Factory-set position	0	0	0	0	0	0	0	0	00
•				•					•
•				•					•
•				•					•
8/60 in. forward (3.4 mm)	0	0	0	0	1	0	0	0	08
9/60 in. forward (3.8 mm)	0	0	0	0	1	0	0	1	09
10/60 in. forward (4.2 mm)	0	0	0	0	1	0	1	0	0A

Table 3-24 Type Style at Power-Up

TYPE STYLE	SW 16-1	16-2	16-3	16-4
Courier*	0	0	0	0
ITC Souvenir	0	0	0	1
Prestige Elite	0	0	1	0
Quick Gothic	0	0	1	1
Draft Gothic	0	1	0	0
Helvetica PS	0	1	0	1
Times PS	0	1	1	0
Bold PS	0	1	1	1
Font Card 1	1	0	0	0
Font Card 2	1	0	0	1
Font Card 3	1	0	1	0
Font Card 4	1	0	1	1

* Factory setting

Table 3-25 Spacing Pitch

SPACING PITCH	SW 16-6	16-7	16-8
10 cpi*	0	0	0
12 cpi	0	0	1
15 cpi	0	1	0
15 cpi	0	1	1
17 cpi	1	0	0
20 cpi	1	0	1
20 cpi	1	1	0
20 cpi	1	1	1

* Factory setting

Table 3-26 Language Character Set

CHARACTER SET	SW 17-4	17-5	17-6	17-7	17-8
United States*	0	0	0	0	0
France	0	0	0	0	1
Germany	0	0	0	1	0
England	0	0	0	1	1
Denmark I	0	0	1	0	0
Sweden	0	0	1	0	1
Italy	0	0	1	1	0
Spain I	0	0	1	1	1
Japan	0	1	0	0	0
Norway I	0	1	0	0	1
Denmark II	0	1	0	1	0
Netherlands	0	1	0	1	1
Turkey	0	1	1	0	0
Spain II	0	1	1	0	1
Latin America	0	1	1	1	0
Reserved for future use	0	1	1	1	1
Multilingual	1	0	0	0	0
Portugal	1	0	0	0	1
Canada-French	1	0	0	1	0
Norway II	1	0	0	1	1
Extra Language	1	0	1	0	0
Extra Language	1	0	1	0	1
Extra Language	1	0	1	1	0
Extra Language	1	0	1	1	1
Extra Language	1	1	0	0	0
Extra Language	1	1	0	0	1
Extra Language	1	1	0	1	0
Extra Language	1	1	0	1	1
Extra Language	1	1	1	0	0
Extra Language	1	1	1	0	1
Extra Language	1	1	1	1	0
Extra Language	1	1	1	1	1

* Factory setting

Table 3-27 Thai Character Set

CHARACTER SET	SW 19-4	19-5	19-6	19-7	19-8
Character set selected by ESC R 80*	0	0	0	0	0
Character set selected by ESC R 81	0	0	0	0	1
Character set selected by ESC R 82	0	0	0	1	0
•			•		
•			•		
•			•		
Character set selected by ESC R 9D	1	1	1	0	1
Character set selected by ESC R 9E	1	1	1	1	0
Character set selected by ESC R 9F	1	1	1	1	1

* Factory setting

Table 3-28 Form Length

FORM LENGTH	SW																HEX EQUIVALENT
	20-1	20-2	20-3	20-4	20-5	20-6	20-7	20-8	21-1	21-2	21-3	21-4	21-5	21-6	21-7	21-8	
2160/720 in. (3.0 in.)	0	1	1	1	0	0	0	0	0	0	0	0	0	1	1	0	0670
2232/720 in. (3.1 in.)	0	1	1	1	0	0	0	1	0	0	0	0	0	1	1	0	0671
2304/720 in. (3.2 in.)	0	1	1	1	0	0	1	0	0	0	0	0	0	1	1	0	0672
•									•								•
•									•								•
•									•								•
8640/720 in. (12.0 in.)*	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	21C0
•									•								•
•									•								•
•									•								•
9936/720 in. (13.8 in.)	0	1	0	1	1	1	1	0	0	0	1	0	0	1	1	1	275E
10008/720 in. (13.9 in.)	0	1	0	1	1	1	1	1	0	0	1	0	0	1	1	1	275F
10080/720 in. (14.0 in.)	0	1	1	0	0	0	0	0	0	0	1	0	0	1	1	1	2760

* Factory set

Table 3-29 Line Spacing

LINE SPACING	SW 22-1	SW 22-2
6 lpi*	0	0
8 lpi	0	1
3 lpi	1	0
4 lpi	1	1

* Factory setting

Table 3-30 Left Margin

LEFT MARGIN	SW 23-1	23-2	23-3	23-4	23-5	23-6	23-7	23-8	HEX EQUIVALENT
0/10 in. (0.0 in.)*	0	0	0	0	0	0	0	0	00
1/10 in. (0.1 in.)	0	0	0	0	0	0	0	1	01
2/10 in. (0.2 in.)	0	0	0	0	0	0	1	0	02
•					•				•
•					•				•
•					•				•
48/10 in. (4.8 in.)	0	0	1	1	0	0	1	0	32
49/10 in. (4.9 in.)	0	0	1	1	0	0	1	1	33
50/10 in. (5.0 in.)	0	0	1	1	0	1	0	0	34

* Factory set

Table 3-31 Paper Detection

PAPER DETECTION	SW 24-7	SW 24-8
Enable*	0	0
Limited	0	1
Disable	1	0
Disable	1	1

* Factory setting

Table 3-32 Fanfold Margin

FANFOLD MARGIN	SW 25-1	25-2	25-3	25-4	25-5	25-6	25-7	25-8	HEX EQUIVALENT
10.0 mm (0.394 in.)	0	0	0	1	0	1	0	0	14
9.5 mm (0.374 in.)	0	0	0	1	0	1	0	1	15
9.0 mm (0.354 in.)	0	0	0	1	0	1	1	0	16
•					•				•
•					•				•
•					•				•
15.0 mm (0.590 in.)*	0	0	0	1	1	1	1	0	1E
•					•				•
•					•				•
•					•				•
49.0 mm (1.929 in.)	0	1	1	0	0	0	1	0	62
49.5 mm (1.949 in.)	0	1	1	0	0	0	1	1	63
50.0 mm (1.968 in.)	0	1	1	0	0	1	0	0	64

* Factory setting

Table 3-33 Center Position with Cut Sheet Guide

CENTER POSITION P62	P72	SW 26-1	26-2
42 column*	70 column*	0	0
42 column	70 column	0	1
30 column	50 column	1	0
30 column	30 column	1	1

* Factory setting

Table 3-34 Center Position with Pull Tractor

CENTER POSITION P62	P72	SW 26-3	26-4
42 column*	70 column*	0	0
42 column	70 column	0	1
30 column	50 column	1	0
30 column	30 column	1	1

* Factory setting

Table 3-35 Buffer Capacity

BUFFER CAPACITY	SW 27-1	27-2
256 bytes*	0	0
48K bytes	0	1
80K bytes	1	0
80K bytes	1	1

* Factory setting

Accessing the Secret Mode

Follow these steps to enter the secret mode and access the memory switches.

CAUTION

Use care when performing the following procedures. Read and understand all procedures before attempting to perform them. Wrong switch settings may disable the printer.

1. Load continuous paper. Check that the power switch is OFF. Unplug the interface cable from the printer.

CAUTION

The interface cable must be unplugged from the printer to avoid damage to the mother board's EEPROM.

2. Simultaneously press and hold **MENU**, **LOAD**, **FF/TEAR**, and **LF**, then press the power switch ON.
3. Switch S1 settings appears on the LCD (see Figure 3-9), then the EEPROM memory switch mode menu will print (see Figure 3-10).

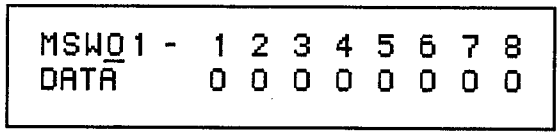


Figure 3-9 Switch S1 Setting

```
F/W Rev.  : GE0940  Sep.14.1992
BMCG Rev. : 03.1
SDCG Rev. : 01.0


Error     : 40

S 1 00000000  S 2 00000000  S 3 00000110  S 4 11000110  S 5 00000000
S 6 00001000  S 7 00000000  S 8 00000000  S 9 00000000  S10 00000000
S11 00000000  S12 00000000  S13 00000000  S14 00000000  S15 00000000

S16 00000000  S17 10000000  S18 10000000  S19 00000000  S20 11000000
S21 00100001  S22 00000000  S23 00000000  S24 00010000  S25 00011011
S26 00000000  S27 10000000  S28 00000000  S29 00000000  S30 00000000
S31 00000000
```

Figure 3-10 EEPROM Memory Mode Menu

4. Check the printout for applicability to current requirements.

   Use the following five control panel buttons to respond to the messages.

   - **MAIN** – Press to move the cursor to the left.
   - **SUB** – Press to move the cursor to the right.
   - ▲ – Press to increase the selected number.
   - ▼ – Press to decrease the selected number.
   - **SELECT** – Press to save the new settings and exit the secret mode.

5. If the settings are correct to current requirements, press **SELECT**. The printer saves the new settings and exits the secret mode, resuming online status.
6. If a setting requires modification, press **MAIN** or **SUB** until the cursor selects the switch number that you want to change.

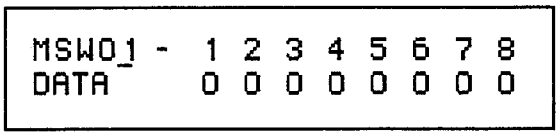


Figure 3-11 Selecting the Switch Number

7. Press ▲ or ▼ until the desired switch number appears.
8. Using **MAIN** and **SUB**, select the desired switch setting.

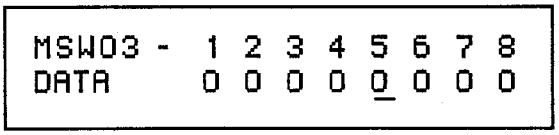
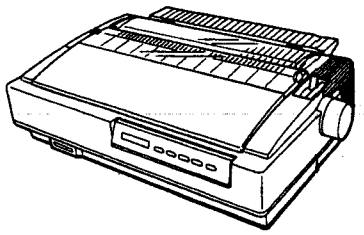


Figure 3-12 Selecting the Switch Number

9. Press ▲ or ▼ until the desired switch setting appears.
10. If other switch requires modification, repeat steps 6 through 9.
11. When the memory switch resetting is completed, exit the secret mode by pressing **SELECT**.

Section 4

Maintenance



This section contains information for maintaining the printer in top condition for continuous, error-free, high-quality performance. Included in this section are procedure for cleaning, printer adjustments, and lubrication.

While performing any maintenance procedure, visually inspect the printer for loose, broken, or missing parts and any other obvious damage. Correct as necessary.

On completion of any procedures in this section, perform the printer tests out-lined in Section 2.

CLEANING

The printer should be cleaned as necessary. There is no set schedule for cleaning, as it depends on the extent of printer use and the environment in which it is operating.

Printer cleaning materials include a soft, lint-free cloth, water, and mild liquid detergent.

CAUTION

Before starting any cleaning procedure, turn off and unplug the printer. Do not use benzine, paint thinner, or other chemicals (or abrasives) to clean the printer's plastic surfaces. Such cleaning materials may dissolve the plastic or cause discoloration.

1. Visually inspect the entire printer, and remove foreign materials (such as bits of paper, dust or paper clips).
2. Use a soft, lint-free cloth, to remove dust from the guide shaft and front stay.
3. Clean any debris from the base frame under the carrier assembly.
4. Clean the cover with a soft cloth dampened with mild detergent and water.
5. Remove any pieces of paper attached to the tractor assembly.
6. Clean the platen with a commercial platen cleaner.

ADJUSTMENTS

This subsection contains adjustment procedures for setting the print head gap, multipart form switch, and column width. The adjustments should be made as indicated by visual observation, poor operation, or a directed during troubleshooting and repair.
The following tools are required to adjust Pinwriter:

- #2 Phillips screwdriver
- Metric feeler gauges
- Adjustable wrench
- Metric ruler
- 14 mm nut driver (136-172225-A)
- Shaft retaining jig (136-172207-A)
- 1.5-mm hexagonal wrench
- Thickness gauge (136-172979-A)

Print Head Gap Adjustment

An improperly adjusted print head can result in smudging on one side of the page and not the other, especially with multipart forms. When the print head is adjusted properly, it operates at the optimum wire stroke to obtain a crisp and legible printout. Before performing the print head gap adjustment, check for a worn ribbon or print wire.

NOTE

In acceptance inspection, check that the print head gap is between 0.012 and 0.017 in. (0.31 and 0.43 mm) with paper thickness setting lever at position 3. If the print quality is still not clear or the print head is replaced, follow these steps to obtain the gap measurement of 0.0135 to 0.016 in. (0.34 to 0.40 mm).

1. Set the paper thickness setting lever to position 3.
2. Remove the top cover, the print head and card holder, and then reinstall the print head.
3. Move the carrier to the left of the printer.
4. Use the thickness gauge to measure the distance between the print head and platen.
5. Move the carrier to the right of the printer.
6. Use the thickness gauge to measure the distance between the print head and platen. The gap should be the same on both ends of the platen. If not, adjust the right side gap by turning the eccentric bushing.

7. Move the carrier to the center of the printer. Measure the distance between the print head and platen (see Figure 4-1). The gap should measure between 0.0135 and 0.016 in. (0.34 and 0.40 mm).

   If the gap is not in range, adjust as follows:

   - Remove the paper thickness setting lever mounting screw, and retighten the screw temporarily (see Figure 4-2).
   - Insert the shaft retaining jig into the hole on the left side of the guide shaft.
   - While holding the thickness gauge in place, carefully turn the guide shaft with the jig until the gap is within 0.0135 to 0.016 in.
   - While holding the guide shaft in place with the jig, tighten the copy control lever screw (tightening torque = 14 kg•cm).

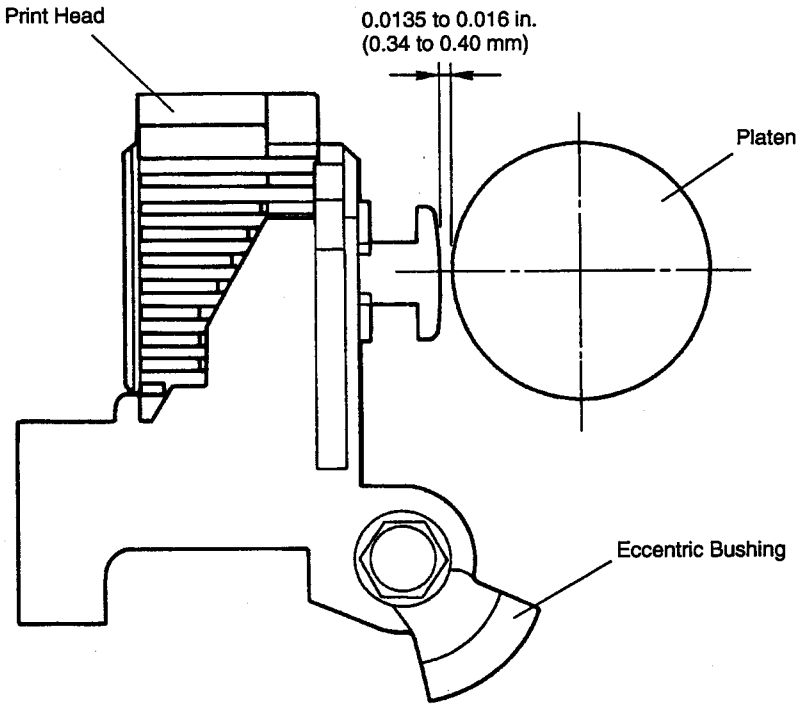


Figure 4-1 Print Head Gap

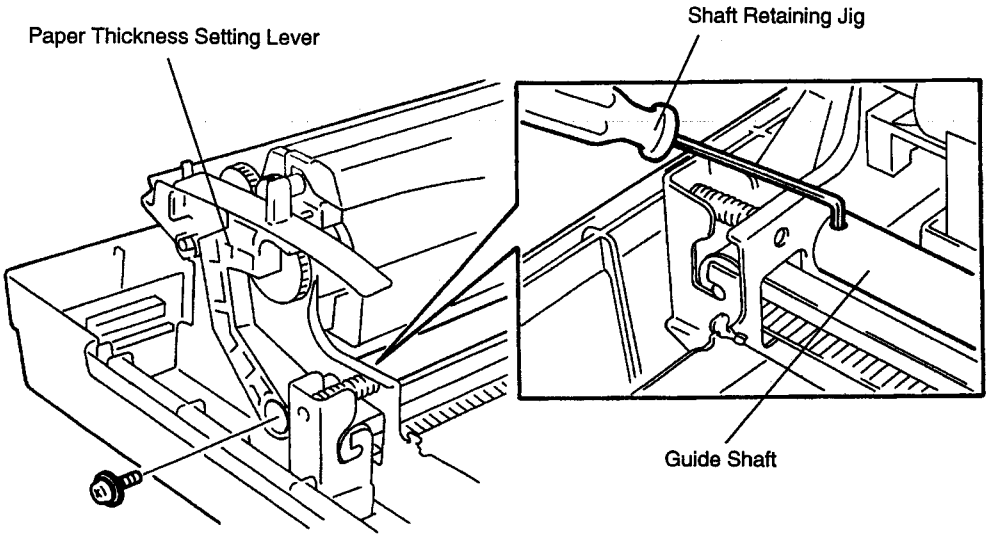


Figure 4-2 Print Head Adjustment

8. To ensure that the gap is within the range of 0.0135 to 0.016 in., perform the following steps.
   - Check that the paper thickness setting lever is set to position 3 and the carrier is centered on the printer.
   - Pull the print head lightly toward the front of the printer.
   - Insert the 0.34-mm thickness gauge between the print head and platen vertically (see Figures 4-3 and 4-4). Check that the gauge falls in the printer without any friction.
   - Replace the thickness gauge to the 0.41-mm's one. Check that the gauge does not fall in the printer.

   If the gap needs adjustment, perform step 7.
9. After removing the print head, replace and adjust the card holder and then replace the print head.
10. Replace the top front cover and ribbon cartridge.

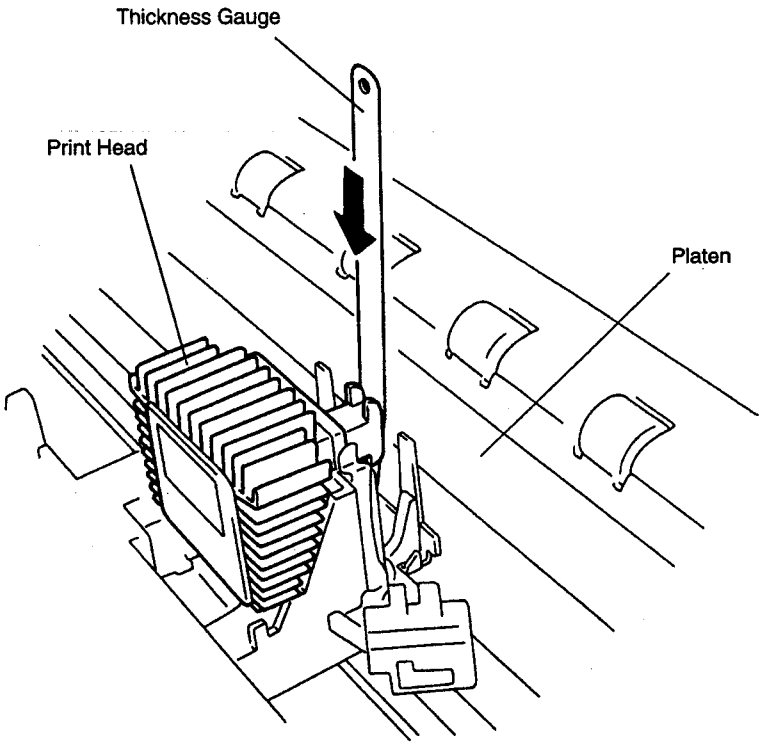


Figure 4-3 Thickness Gauge

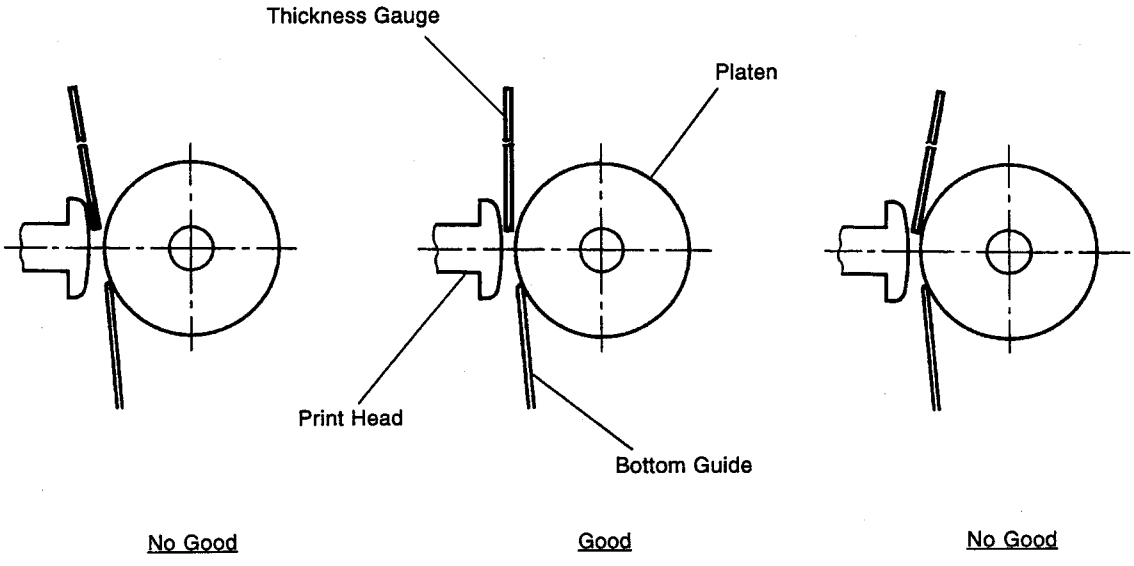


Figure 4-4 Gauge Insertion Angle

Card Holder Adjustment

If the print is smudged or the auto-load feature is not operating properly, the card holder may need adjustment. To adjust the card holder, follow these steps.

1. Remove the top cover, ribbon cartridge, print head, and card holder.
2. Find the two adjusting screws on the carrier frame (see Figure 4-5).

   Turn the two screws counterclockwise for a few times.
3. Loosen the screw on the card holder bracket. Slide the bracket as shown in Figures 4-6, and 4-7, and tighten the screw.

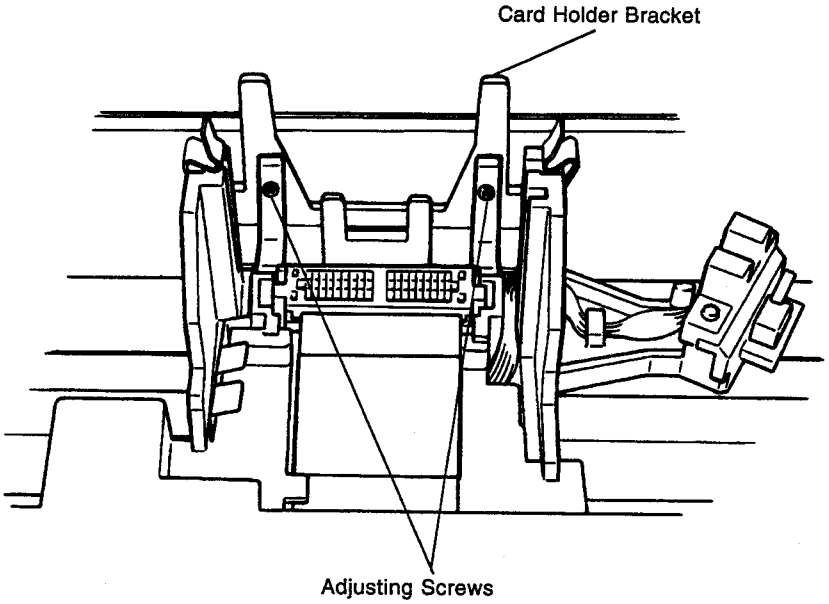


Figure 4-5 Adjusting Screws

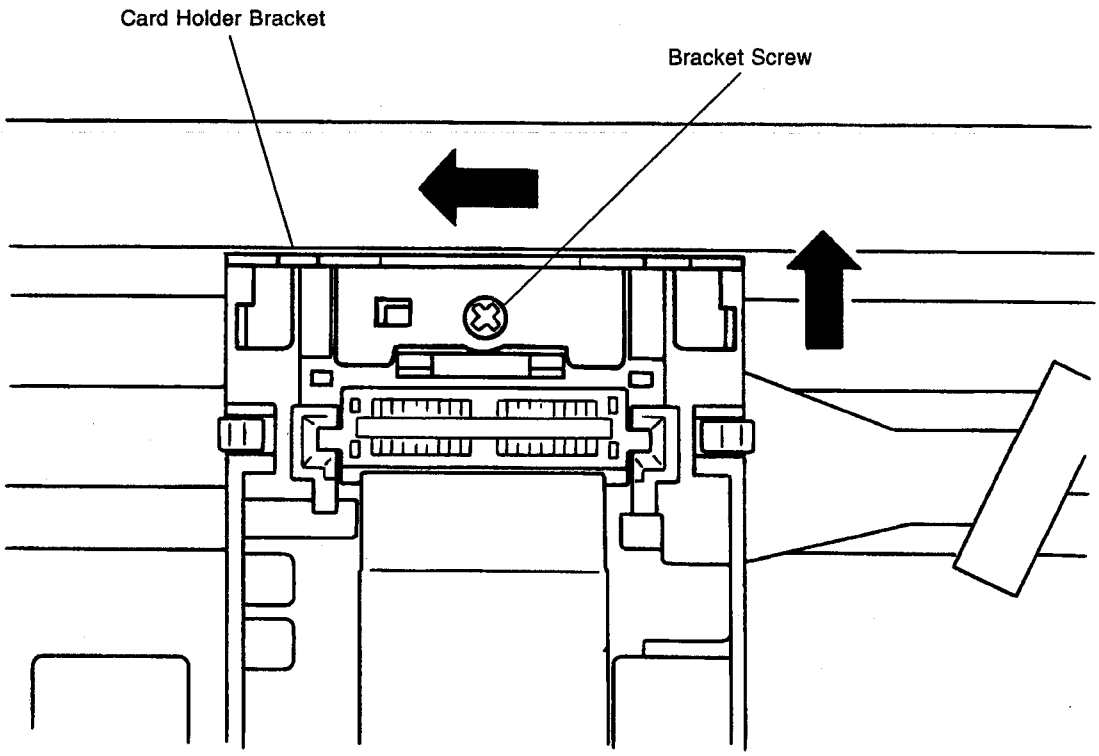


Figure 4-6 Card Holder Bracket Positioning

NOTE

The card holder bracket should contact the carrier frame as shown below.

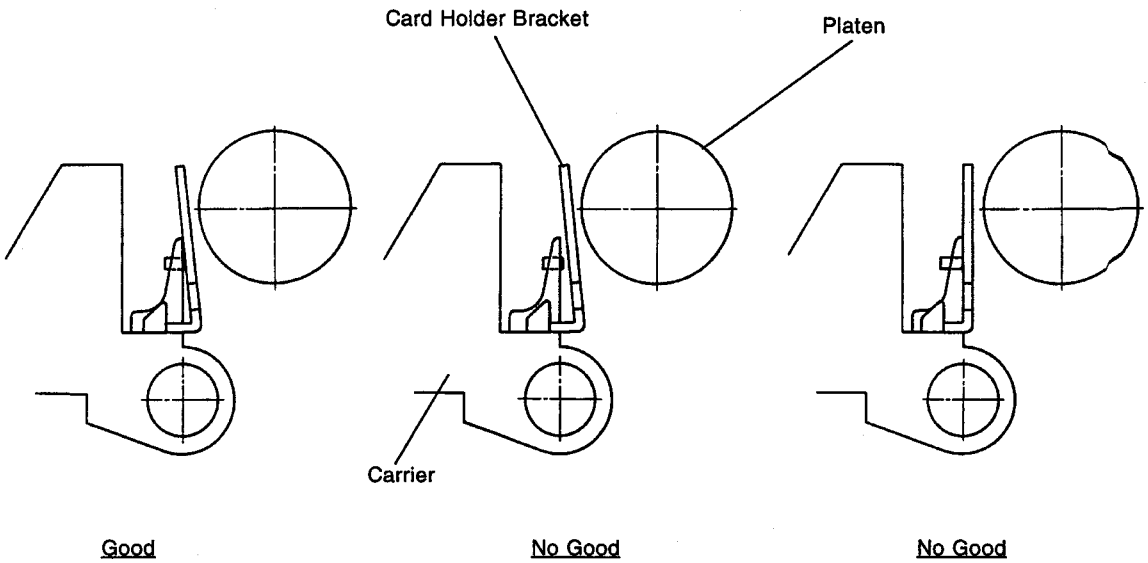


Figure 4-7 Card Holder Bracket Location

4. Insert the 1.85-mm thickness gauge between the card holder bracket and platen (see Figure 4-8).

   Set the paper thickness setting lever to position 0.

5. Turn the two adjusting screws until the card holder bracket slightly holds the gauge against the platen (see Figure 4-8).
6. Set the paper thickness setting lever to position 10 and remove the gauge.
7. To ensure that the gap is within the specified range, perform the following steps.
   - Set the paper thickness setting lever to position 0.
   - Pull the print head lightly toward the front of the printer.
   - Insert the 1.85-mm thickness gauge between the card holder bracket and platen vertically (see Figure 4-9). Check that the gauge falls in the printer without any friction.
   - Replace the thickness gauge with the 1.90-mm one. Check that the gauge does not fall in the printer.

   If the above gap adjustment is not successful, repeat from step 2.

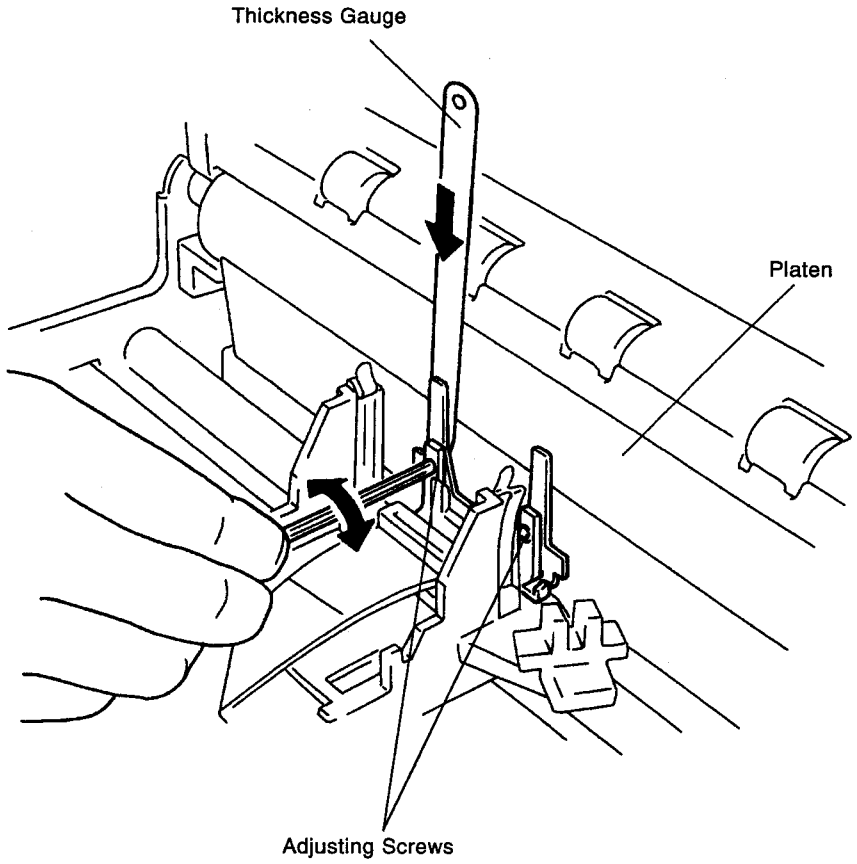


Figure 4-8 Gap Adjustment

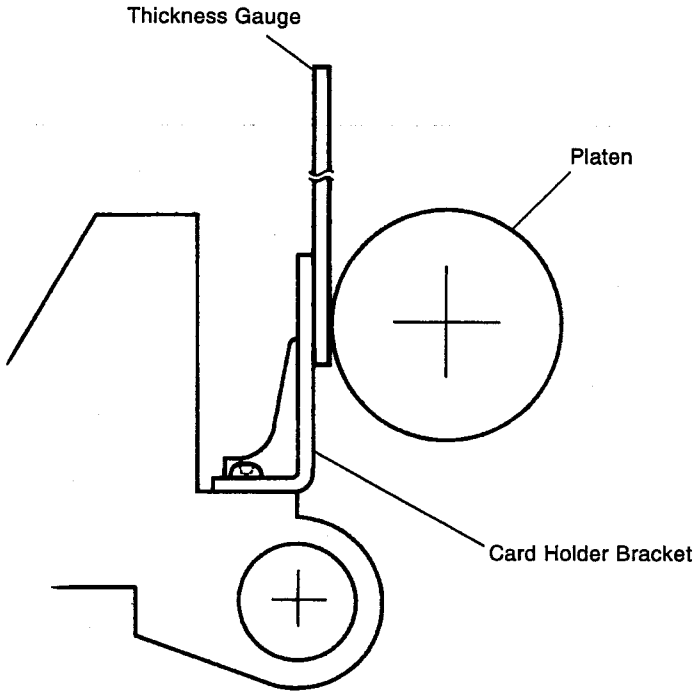


Figure 4-9 Card Holder Bracket Gap

8. Replace card holder on the card holder bracket.

   Set the gap adjust lever to "0."

9. Prepare the cut sheet (55 kg in weight and 0.08 in thickness). Insert a sheet between the card holder and platen, and check its movement for areas A and B (see Figure 4-10). The sheet should be moved freely.

   If the gap needs adjustment, adjust the gap by carefully turning the two adjusting screws on the carrier frame.

10. Replace the print head, ribbon cartridge, and top cover.

    Perform a self-test and check the print quality. If the print is smudged or the paper does not load properly, perform the card holder adjustment again.

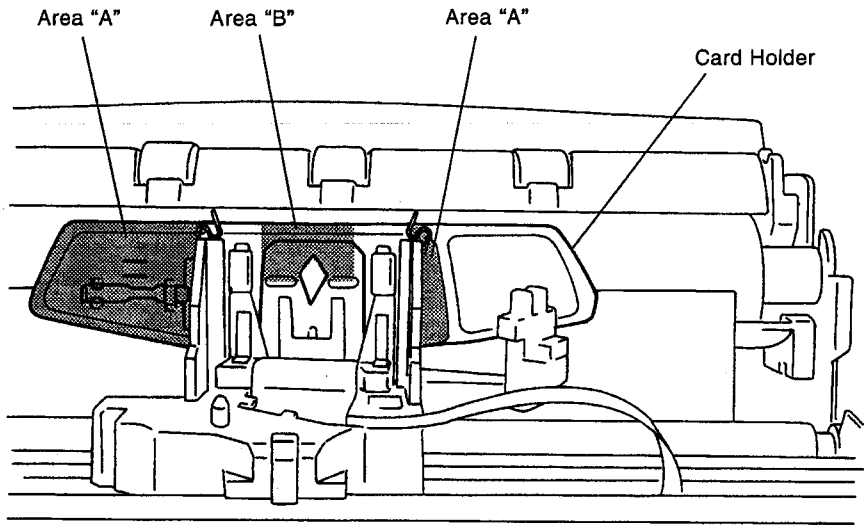


Figure 4-10 Card Holder Areas

PF Sensor Adjustment

The PF switch, when actuated by the gap adjust lever at position 5 through 11, signals the SP motor to reduce its speed by 1/3. If the speed is not reduced, poor printout with multipart forms may occur. The poor printout is indicated by light print or no print on the second and following parts of the form.

If this occurs, adjust the switch as follows.

Follow these steps to adjust the PF sensor for correct operation.

1. Set the paper thickness setting lever to position 5.
2. Remove the middle cover assembly.
3. Loosen the screw securing the PF sensor to the left side frame (see Figure 4-11).
4. Adjust the PF sensor and tighten it with the screw so that the PF sensor is ON.
5. Set the paper thickness setting lever to position 4, and make sure that the PF sensor is OFF.
6. Replace the middle cover assembly.

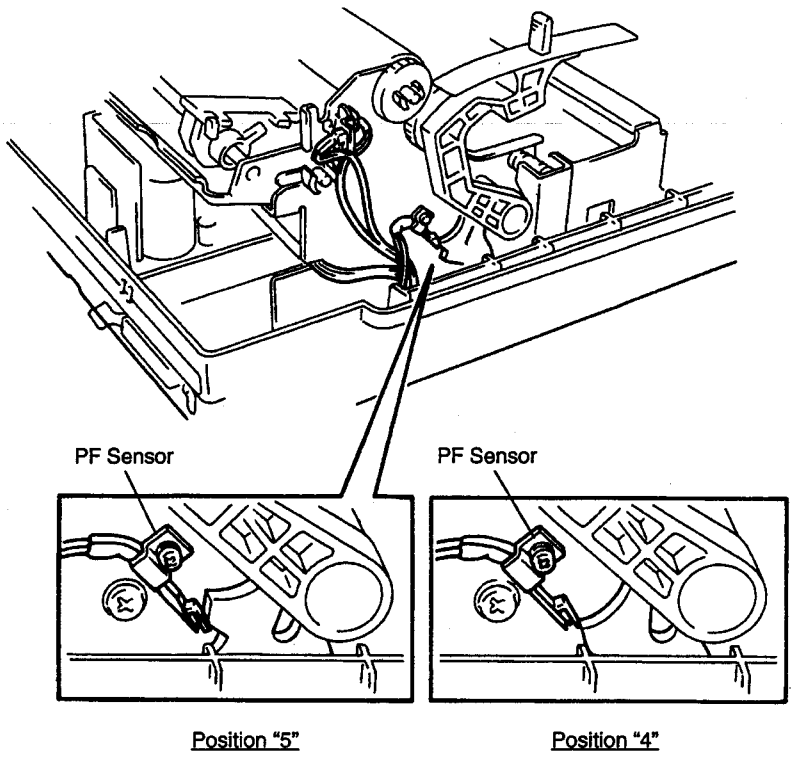


Figure 4-11 PF Sensor Adjustment

PSD Power (C) Output Voltage Adjustment

Follow these steps to adjust the power supply output voltage.

1. Connect the 220 to 240 V power supply to connector CN 1 (see Figure 4-12).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-12).

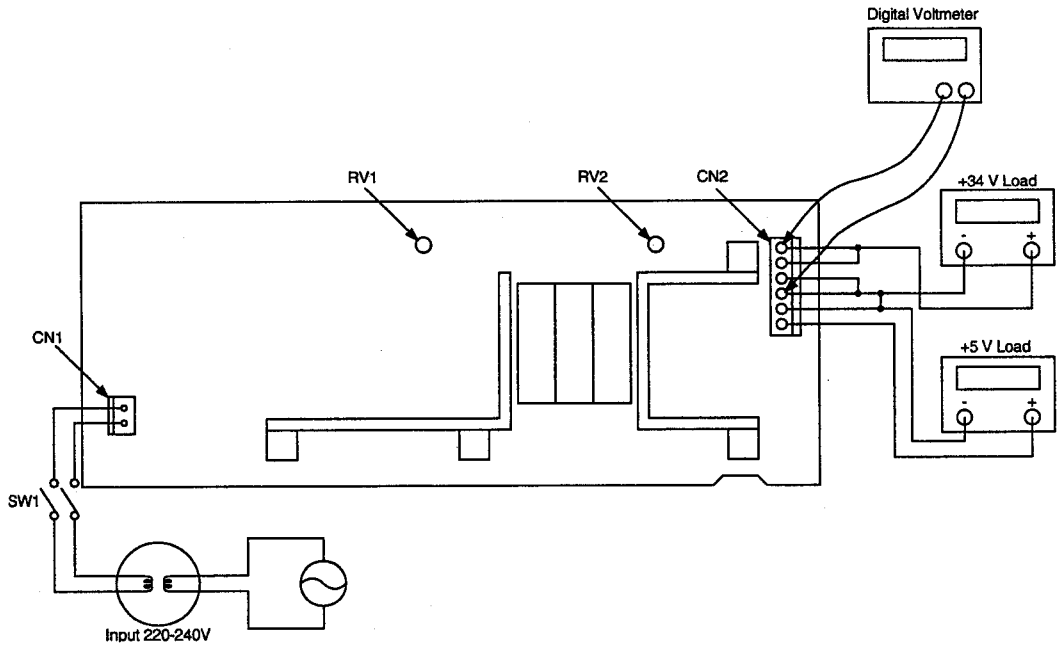


Figure 4-12 PSD Power (C) Adjustment Circuit

3. Set RV1 and RV2 knobs to the position shown below.

Figure 4-13 PSD Power (C) Adjusters

4. Apply no load to the +5 V and +34 V loads, and set SW1 to ON.
5. Set the +5 V and +34 V loads to 2A and 2.65A, respectively.
6. Turn the RV2 knob clockwise until the digital voltmeter reads the +34V, and adjust it to 34 ±0.04 V.
7. After completing the adjustment, lock the RV2 knob by applying silicon rubber on it.
8. Proceed to the power supply output power adjusting procedure.

PSD Power (C) Output Power Adjustment

Follow these steps to adjust the power supply output voltage

1. Connect the 220-240 V power supply to connector CN1 (see Figure 4-12).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-12).
3. Apply no load to the +34 V and +5 V loads.
4. Set the input voltage to 198 V.
5. Set SW1 to ON.
6. Set the +5 V and +34 V loads to 2A and 6.5A, respectively.
7. When the +34 V output voltage is higher than 33 V, turn the knob RV1 in the direction of the arrow until it reaches the position where the +34 V output voltage becomes lower than 33 V.
8. When the +34 V output voltage is lower than 33 V, turn the RV1 knob clockwise of the arrow until it reaches the position where the +34 V output voltage becomes higher than 33 V.
9. Lock the RV1 knob with silicon rubber.

PSG-C1 Power Output Voltage Adjustment

Follow these steps to adjust the power supply output voltage.

1. Connect the 220 to 240 V power supply to connector CN 1 (see Figure 4-14).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-14).

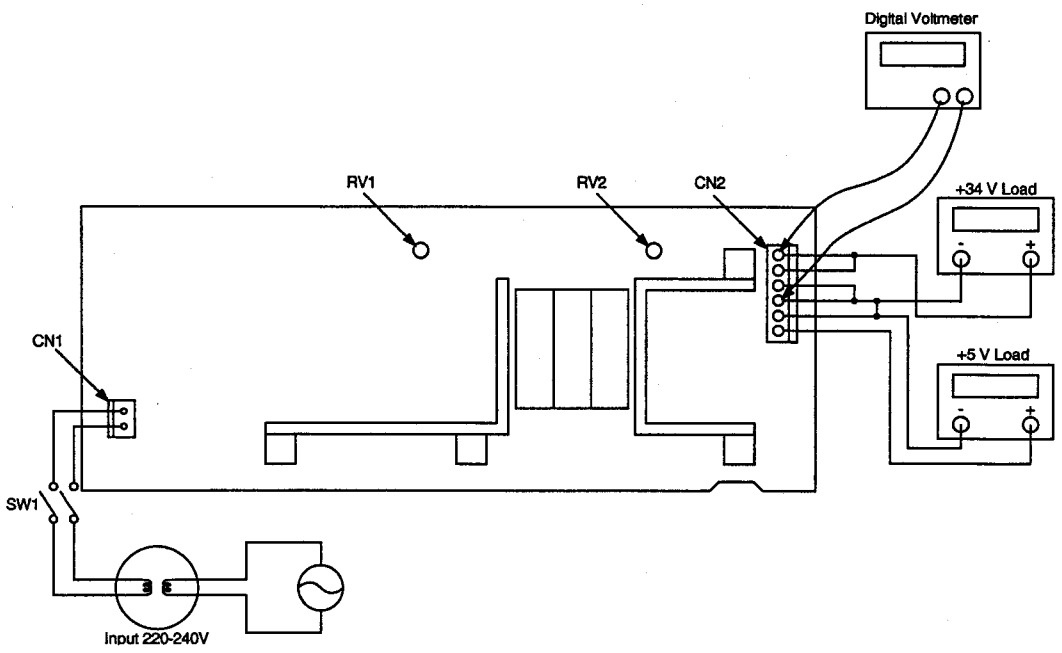


Figure 4-14 PSG-C1 Power (C) 313 Adjustment Circuit

3. Set RV1 and RV2 knobs to the position shown below.

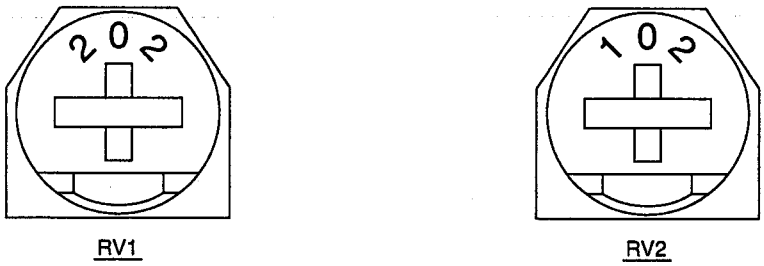


Figure 4-15 PSG-C1 Power (C) 313 Adjusters

4. Apply no load to the +5 V and +34 V loads, and set SW1 to ON.
5. Set the +5 V and +34 V loads to 2A and 2.65A, respectively.
6. Turn the RV2 knob clockwise until the digital voltmeter reads the +34 V, and adjust it to 34 ±0.04 V.
7. After completing the adjustment, lock the RV2 knob by applying silicon rubber on it.
8. Proceed to the power supply output power adjusting procedure.

PSG-C1 Power Output Power Adjustment

Follow these steps to adjust the power supply output voltage.

1. Connect the 220-240 V power supply to connector CN1 (see Figure 4-14).
2. Connect the +34 V and +5 V loads to connector CN2 (see Figure 4-14).
3. Apply no load to the +34 V and +5 V loads.
4. Set the input voltage to 198 V.
5. Set SW1 to ON.
6. Set the +5 V and +34 V loads to 2A and 6.5A, respectively.
7. When the +34 V output voltage is higher than 33 V, turn the knob RV1 in the direction of the arrow until it reaches the position where the +34 V output voltage becomes lower than 33 V.
8. When the +34 V output voltage is lower than 33 V, turn the RV1 knob clockwise of the arrow until it reaches the position where the +34 V output voltage becomes higher than 33 V.
9. Lock the RV1 knob with silicon rubber.

LUBRICATION

Lubricate parts only if they have been replaced or if lubricant has been removed during a repair, cleaning, or adjustment procedure. Table 4-1 gives the lubrication requirements for each point. The designation letters in Tables 4-1 and 4-2 correspond to the letters in Figures 4-16 through 4-27. The figures show the lubrication points.

Recommended lubricants include the following.

- Daphne Eponex or Coronex
  Use a light brush coat.
  Lube code : G
- Daphne Mechanic Oil #35 or 132G Oil
  Use 1 to 2 drops.
  Lube code: 0

Table 4-1 Mechanism Assembly Lubrication Points

DESIGNATION	LOCATION	LUBRICATION CODE
(A)	Contact surface of right side frame hole and paper release arm	G
(B)	Contact surface of paper selection lever and paper release arm	G
(C)	Contact surface of left side frame and paper thickness setting lever	G
(D)	Guide shaft. Front stay.	O
(E)	Piece (1) of carrier	O
(F)	Contact surface of carrier frame and ribbon feed pulley, planet arm, counter gear and ribbon drive gear.	G
(G)	Contact surface of planet arm and planet gear	G
(H)	Contact surface of ribbon base and torque piece gear	G
(I)	Contact surface of manual feed gear and platen shaft.	G

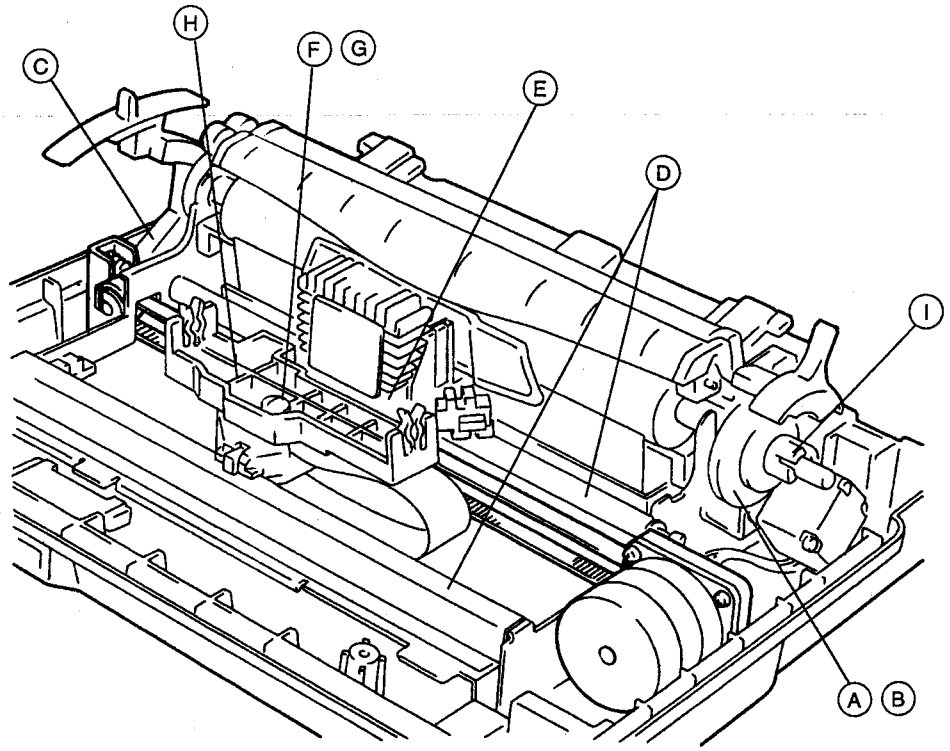


Figure 4-16 Mechanical Assembly Lubrication Points

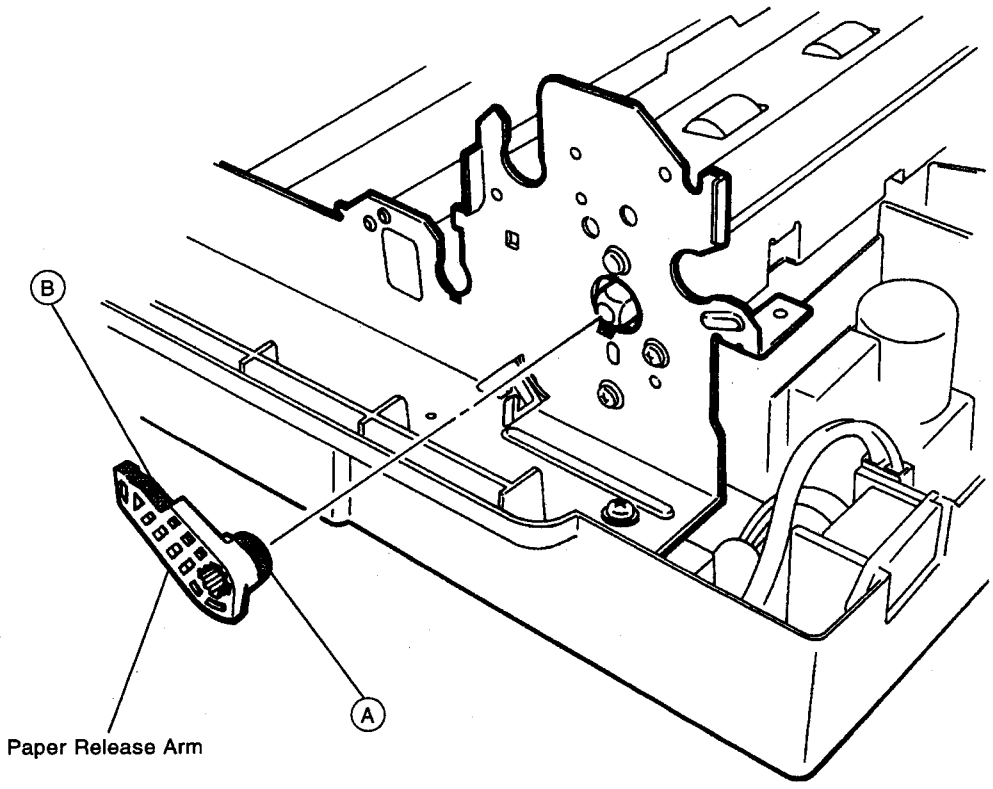


Figure 4-17 Paper Release Arm Lubrication Point

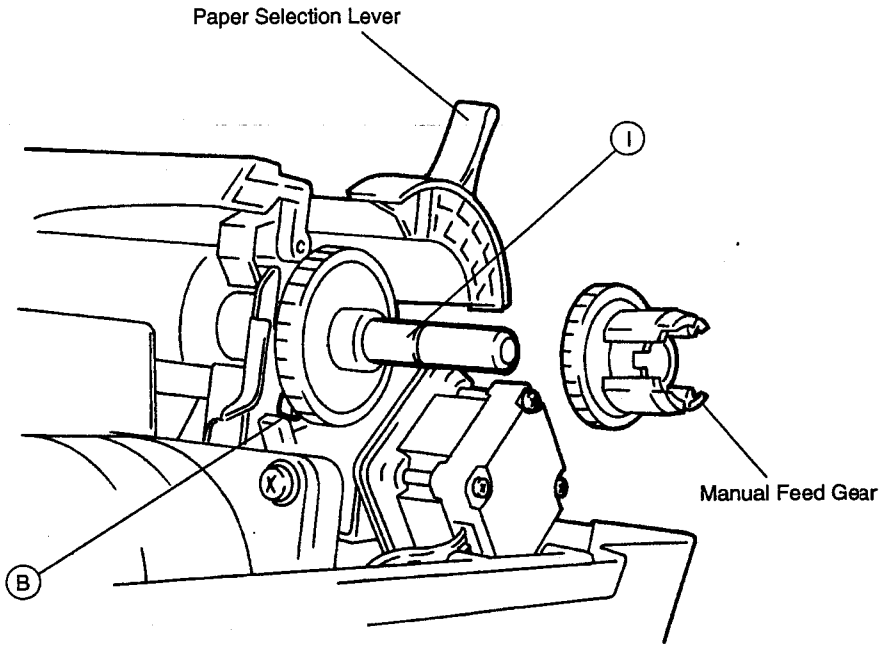


Figure 4-18 Paper Selection Lever Lubrication Points

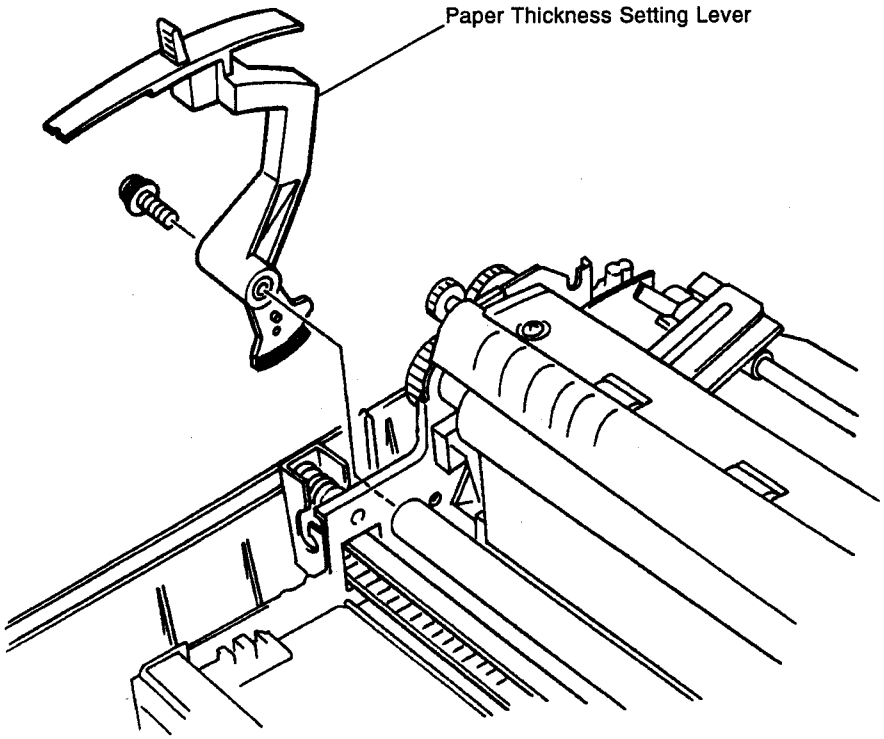


Figure 4-19 Lubrication Point of Paper Thickness Setting Lever

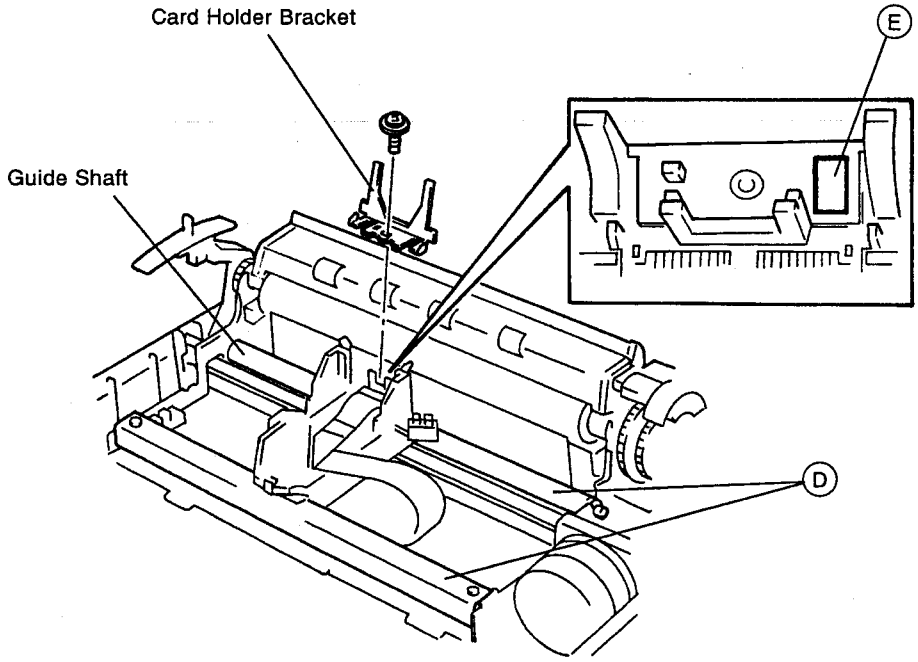


Figure 4-20 Guide Shaft, Front Stay and Piece (1)

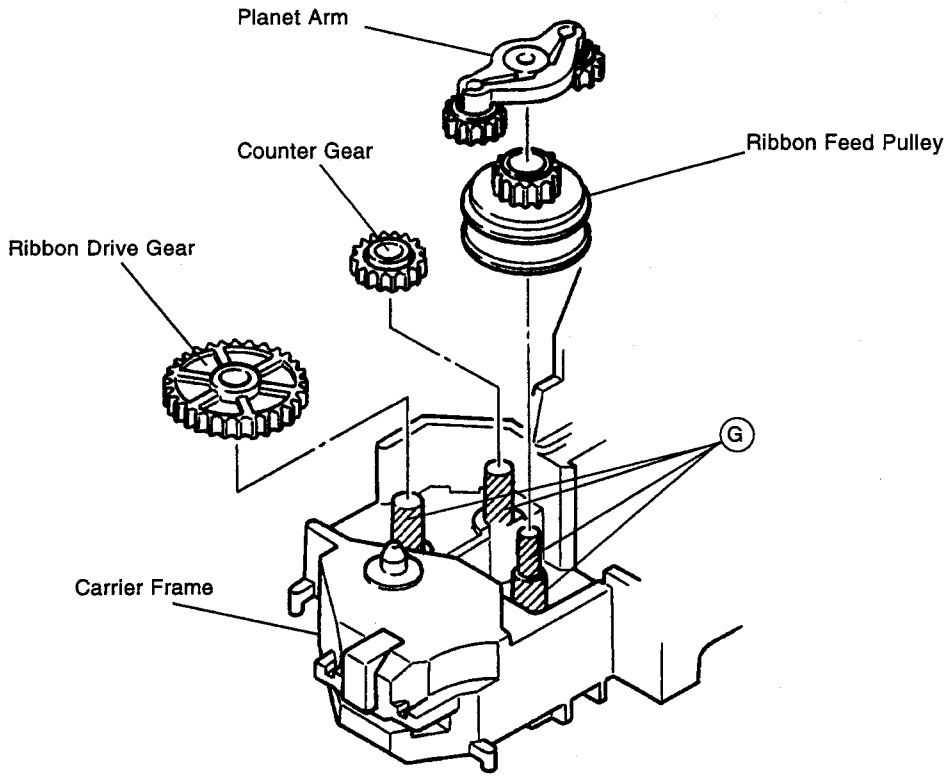


Figure 4-21 Carrier Assembly Lubrication Points

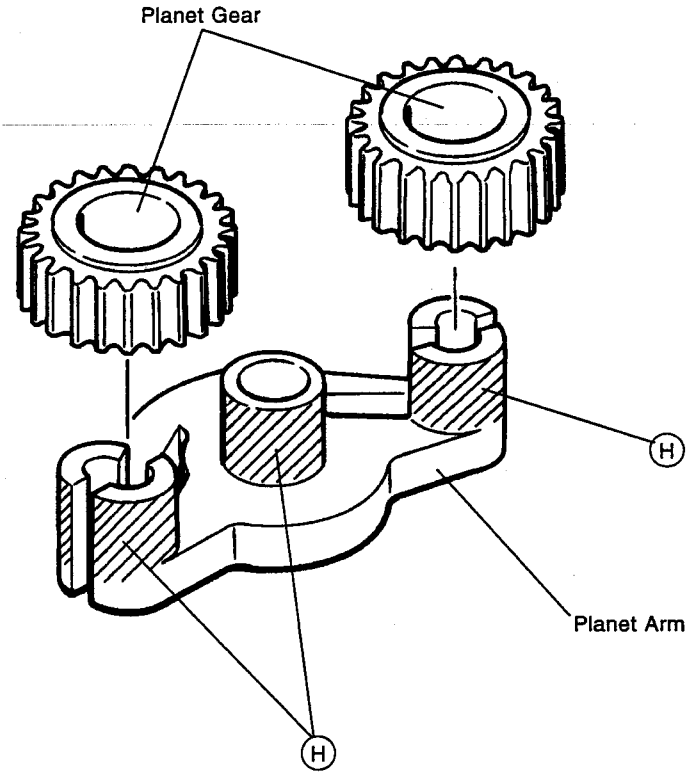


Figure 4-22 Planet Arm Lubrication Points

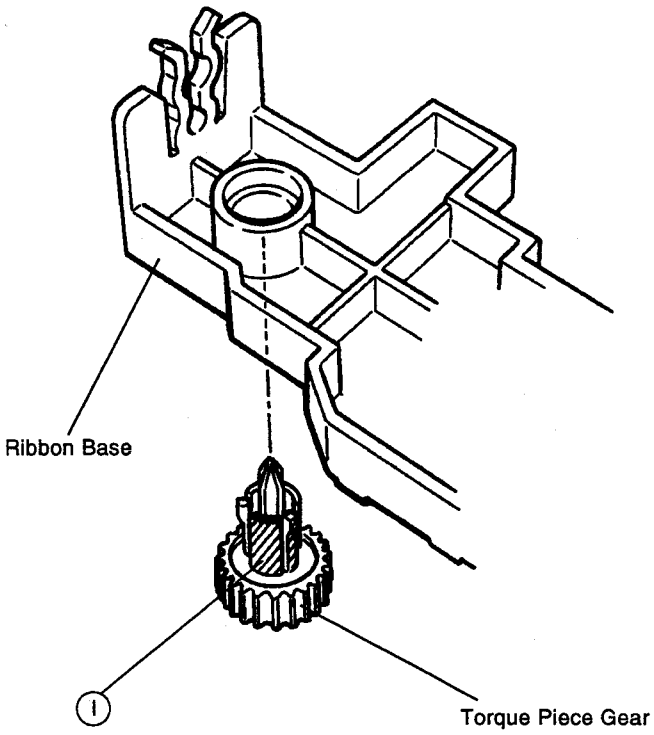


Figure 4-23 Ribbon Base Assembly Lubrication Point

Table 4-2 Lubrication Points for Optional Sheet Feeder

DESIGNATION	LOCATION	LUBRICATION CODE
1 Bin Sheet Feeder:		
(J)	Contact surface of pressure roller and back-up piece.	G
(K)	Contact surface of clutch subassembly and middle disk assembly.	G
2 Bin Sheet Feeder:		
(L)	Contact surface of pressure roller and back-up piece.	G
(M)	Contact surface of clutch subassembly and middle disk assembly.	G
(N)	Teeth of each gear	G

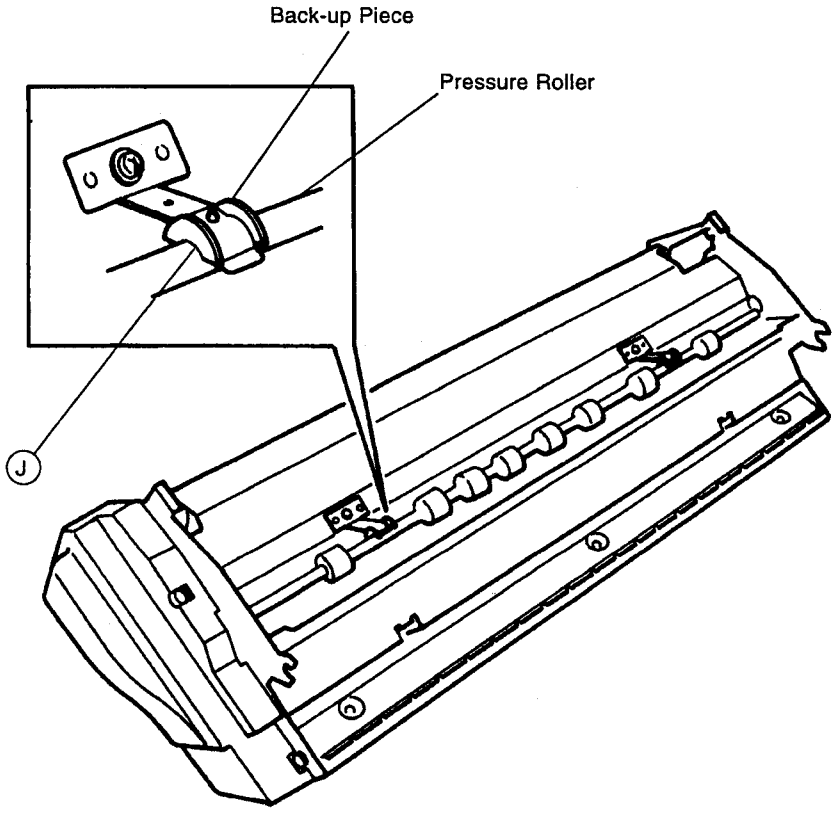


Figure 4-24 Lubrication Point of 1 Bin Sheet Feeder-Pressure Roller

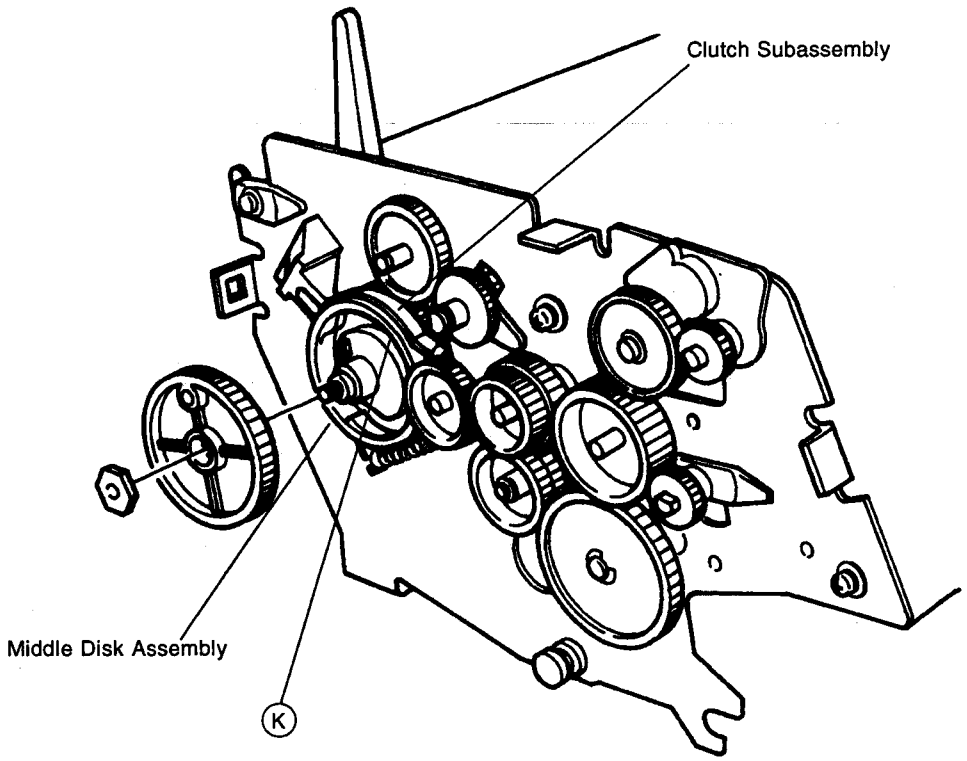


Figure 4-25 Lubrication Point of 1 Bin Sheet Feeder-Clutch Subassembly

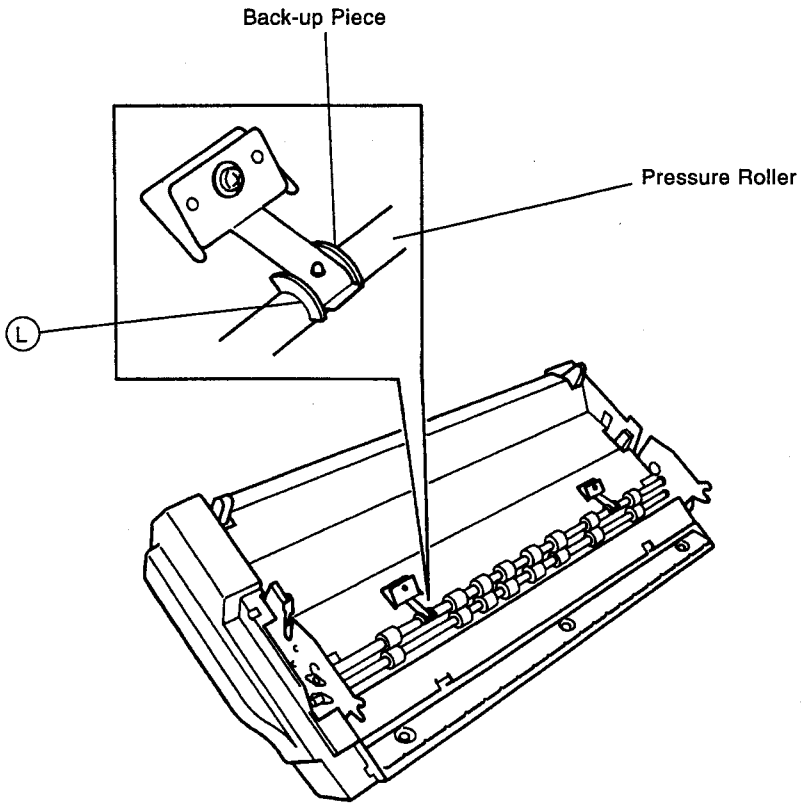


Figure 4-26 Lubrication Point of 2 Bin Sheet Feeder-Pressure Roller

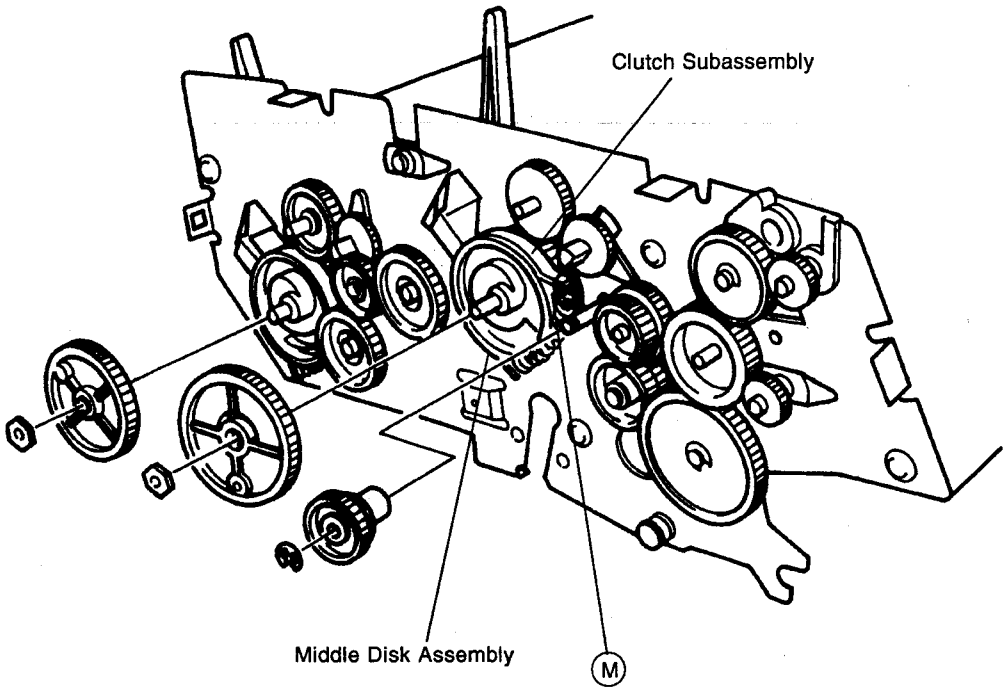
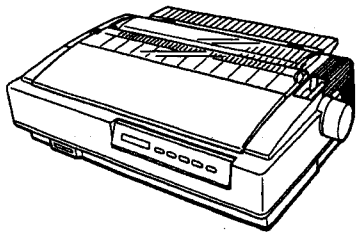


Figure 4-27 Lubrication Point of 2 Bin Sheet Feeder- Gear Teeth

Section 5

Troubleshooting



This section contains troubleshooting information that will help identify a malfunction in the printer to a field replaceable module or part.

Troubleshooting aids include printer self-tests, error messages, test points, and troubleshooting table. Error messages appear on the control panel's LCD. These messages identify malfunctions within the option board, electronic circuits, and mechanical assemblies. The LCD also displays status messages (see Section 3) that identify minor printer problems (cover open, paper out, etc.). Test points are provided to check power board voltages, and a troubleshooting flowcharts offer solutions to specific printer problems.

When a malfunction has been isolated and all appropriate actions taken, the print tests described in Section 2 should be run to assure that the printer operates properly.

ERROR MESSAGES

The LCD on the control panel displays error messages to help diagnose printer malfunctions. The error messages are divided into three groups: "ERROR BX" indicates an error in the option board, "ERROR EX" indicates an error in the electronic circuit, and "ERROR MX" indicates and error in the mechanical assembly.

Table 5-1 through 5-3 give the values of X and the corresponding definition for each type of error. LCD displays error messages, and SELECT lamp off, if one of them occurs. Electronic circuit diagnostic is done once at power up. If powered up with **FF/TEAR** and **LF** button bolded, printer continues this diagnostics until power off.

Figure 5-1 shows the order of the error messages displayed on the LCD.

Table 5-1 Option Board Error (BX)

VALUE OF X	ERROR DEFINITION
80	Check sum error for font card
81	Unusable font card is inserted
82	Font card pulled out while power is on
90	Timer check error in RS-232C
91	Check sum error for RS-232C firmware ROM
92	Read/write check error for RS-232C RAM
93	RS-232C option error (hardware)
94	Communication error between RS-232C option and printer

Table 5-2 Electronic Circuit Errors (EX)

VALUE OF X	ERROR DEFINITION
10	Check sum error for master firmware ROM
11	Read/write check error for RAM
12	Check sum error for resident CG ROM
13	Check sum error for option CG ROM
14	Unusable option CG ROM is installed
18	Check sum error for data-written EEPROM or write check error for EEPROM
19	Data is not written in the EEPROM
1A	EEPROM access mode error
20-2A	Firmware ROM is uncontrollable

Table 5-3 Mechanical Assembly Errors (MX)

VALUE OF X	ERROR DEFINITION
40	Carrier homing error
41	Carrier movement error during printing
50	Color ribbon homing error
51	Color ribbon change error
60	Sheet feeder paper eject error at power on

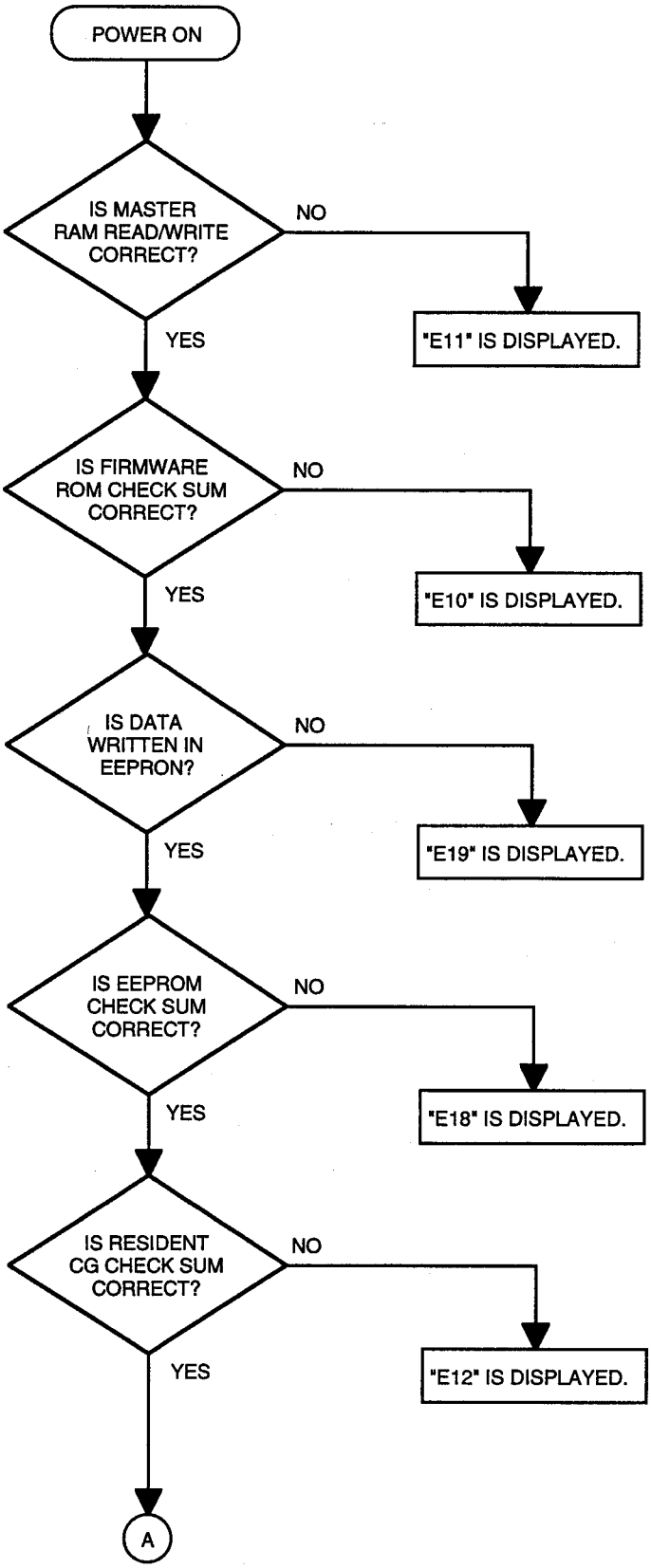


Figure 5-1 Error Codes (1/4)

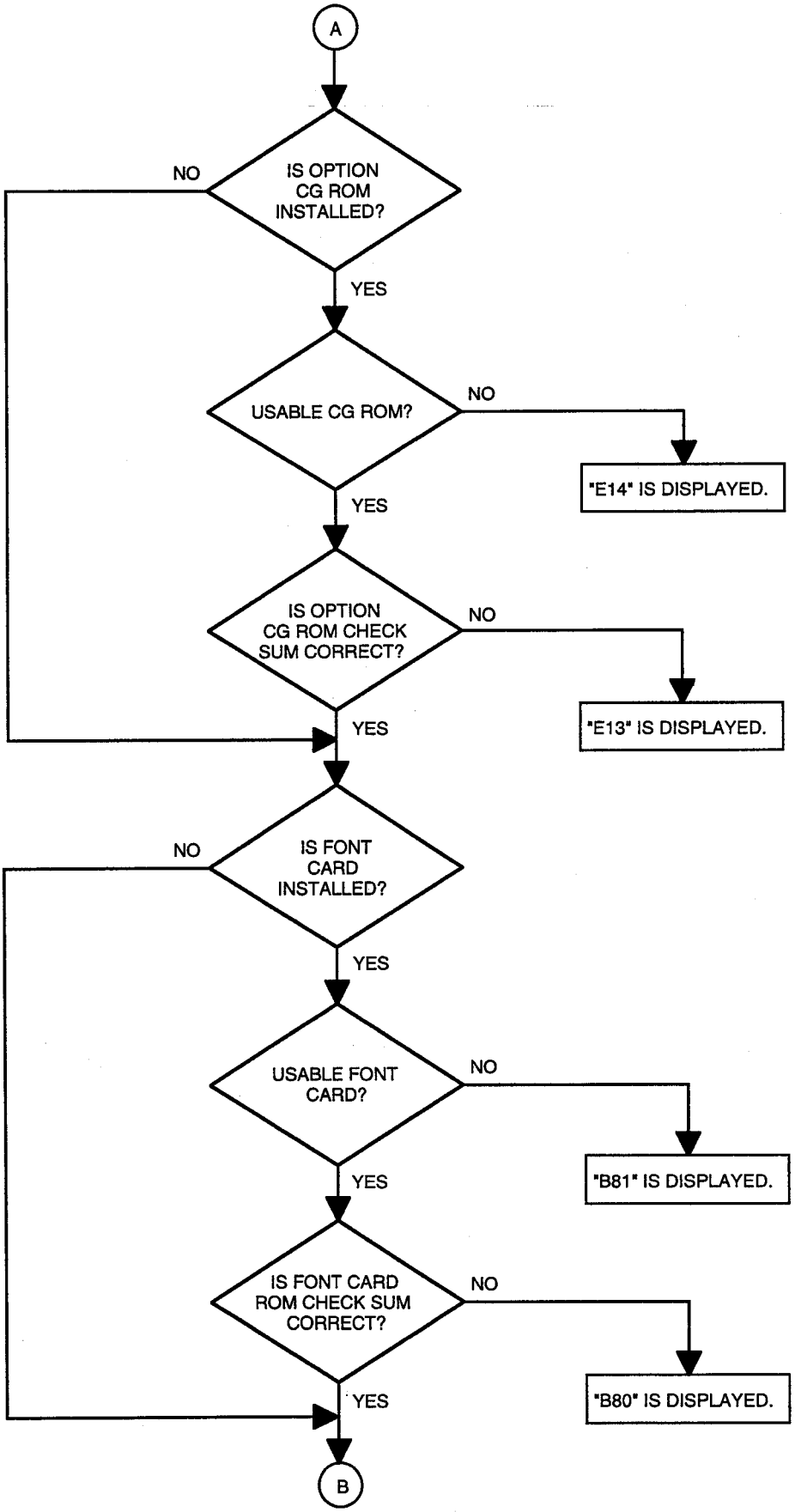


Figure 5-1 Error Codes (2/4)

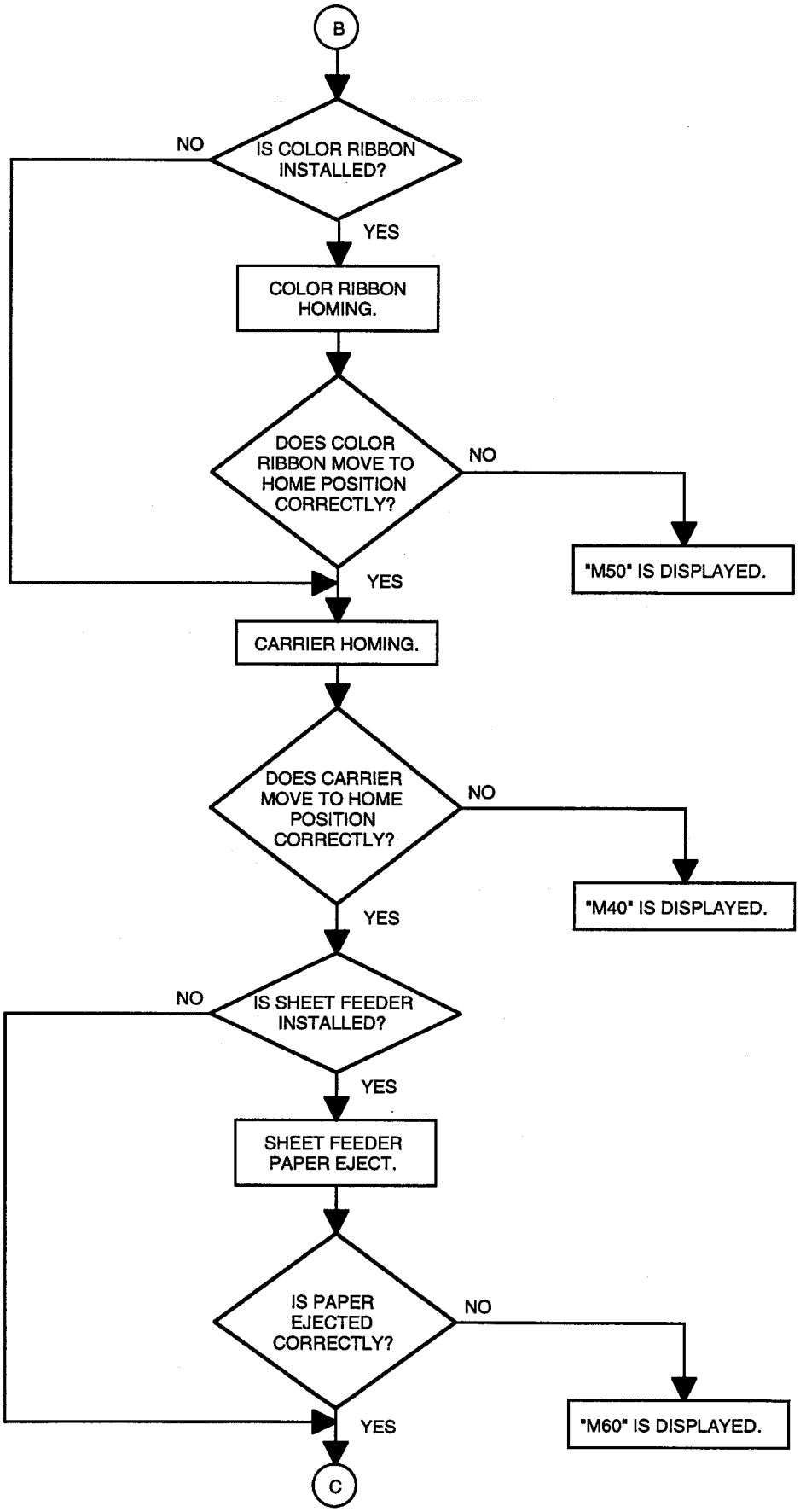


Figure 5-1 Error Codes (3/4)

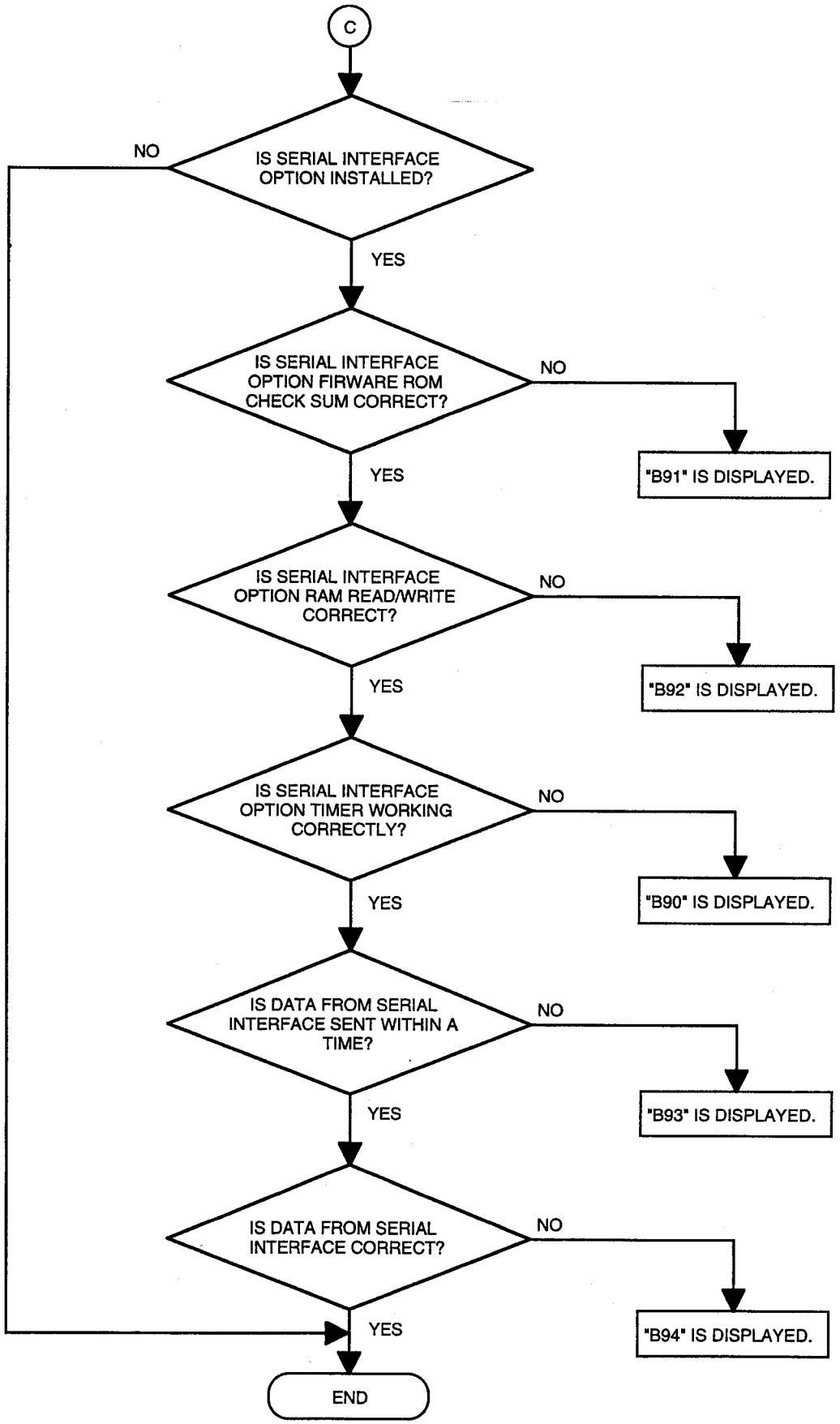


Figure 5-1 Error Codes (4/4)

POWER BOARD TEST POINTS

When the power supply seems to be defective, check the output voltage first of all. CN2 on the power board allow you to check the +5 V and +34 V outputs.

WARNING

Dangerous voltage exists on the power board connector CN1. Make sure you are familiar with the locations of the power board connectors CN1 and CN2 before checking voltages.

PSD POWER (C): 808-891104-313-A

Use the following procedure to check the voltage.

1. To check +5 V output voltage, connect a positive lead to pin 1 and negative lead to pin 2.
2. To check +34 V output voltage, connect a positive lead to pin 5 or 6 and negative lead to pin 3 or 4.

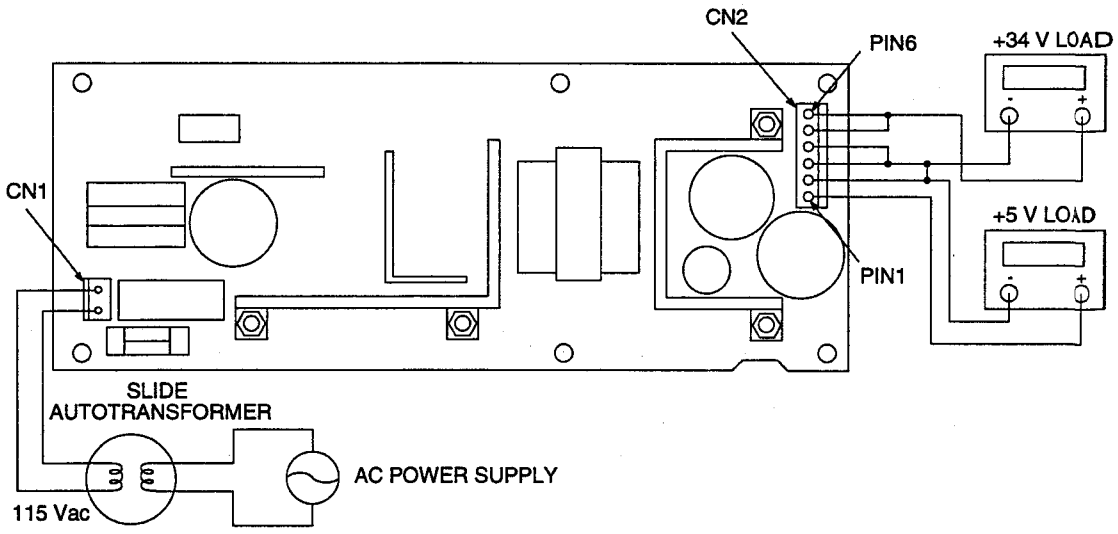


Figure 5-2 PSD Power (C) Output Voltage Check

PSG-C1 POWER: 808-891379-313-A

Use the following procedure to check the voltage.

1. To check +5 V output voltage, connect a positive lead to pin 1 and negative lead to pin 2.
2. To check +34 V output voltage, connect a positive lead to pin 5 or 6 and negative lead to pin 3 or 4.

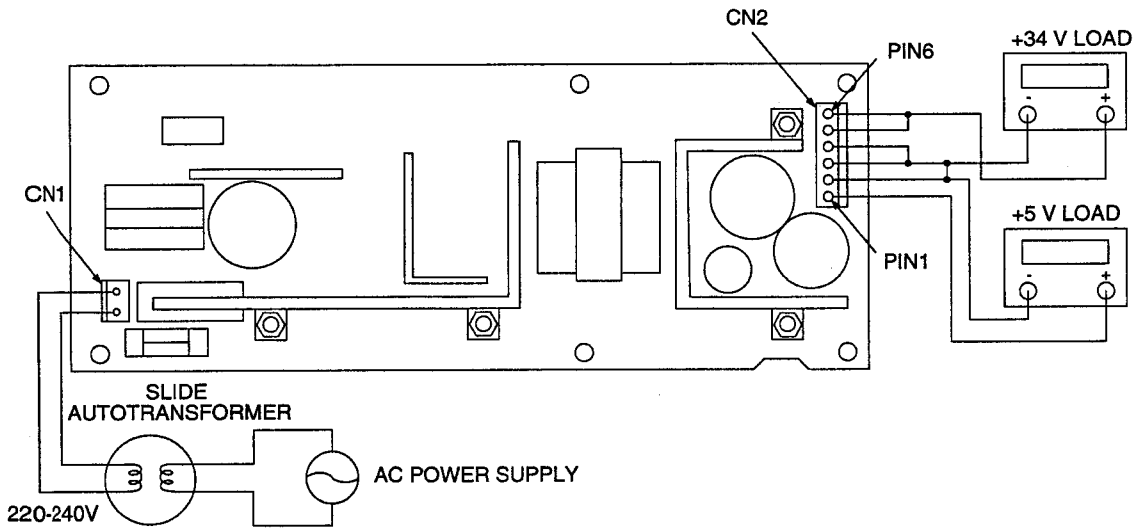


Figure 5-3 PSG-C1 Power Output Voltage Check

SPECIFIC TROUBLESHOOTING PROCEDURES

The following flowcharts give troubleshooting procedures for these printer problems.

- Power lamp does not light.
- Carrier does not initialize.
- Control panel buttons do not function properly.
- Control panel lamps do not function properly.
- Self-test printout is abnormal.
- On-line printing using the serial interface is abnormal.
- On-line printing using the parallel interface is abnormal.
- Color printing is abnormal.
- PSD Power (C) is faulty.

Refer to the appropriate flowchart for solutions to a particular problem.

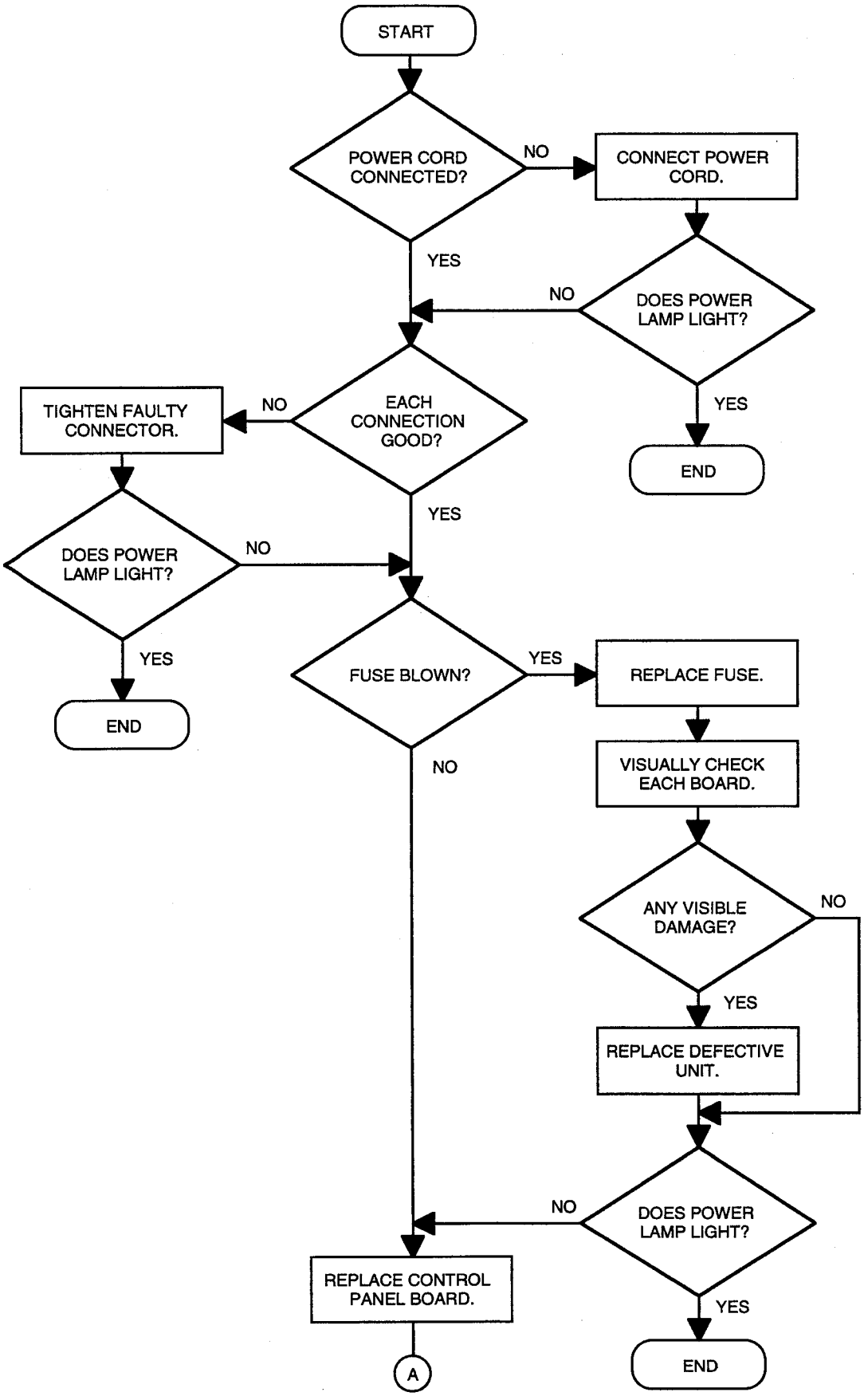


Figure 5-4 Power Lamp Does Not Light (1/2)

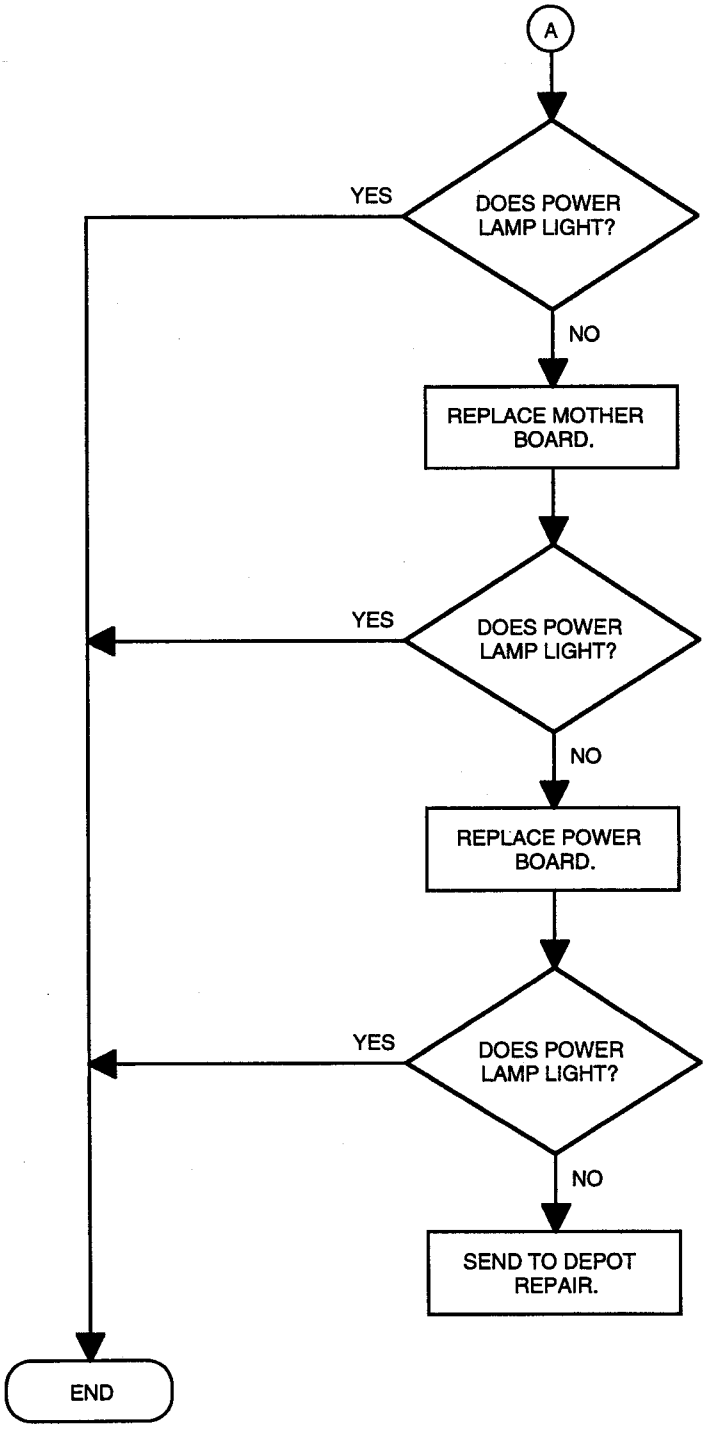


Figure 5-4 Power Lamp Does Not Light (2/2)

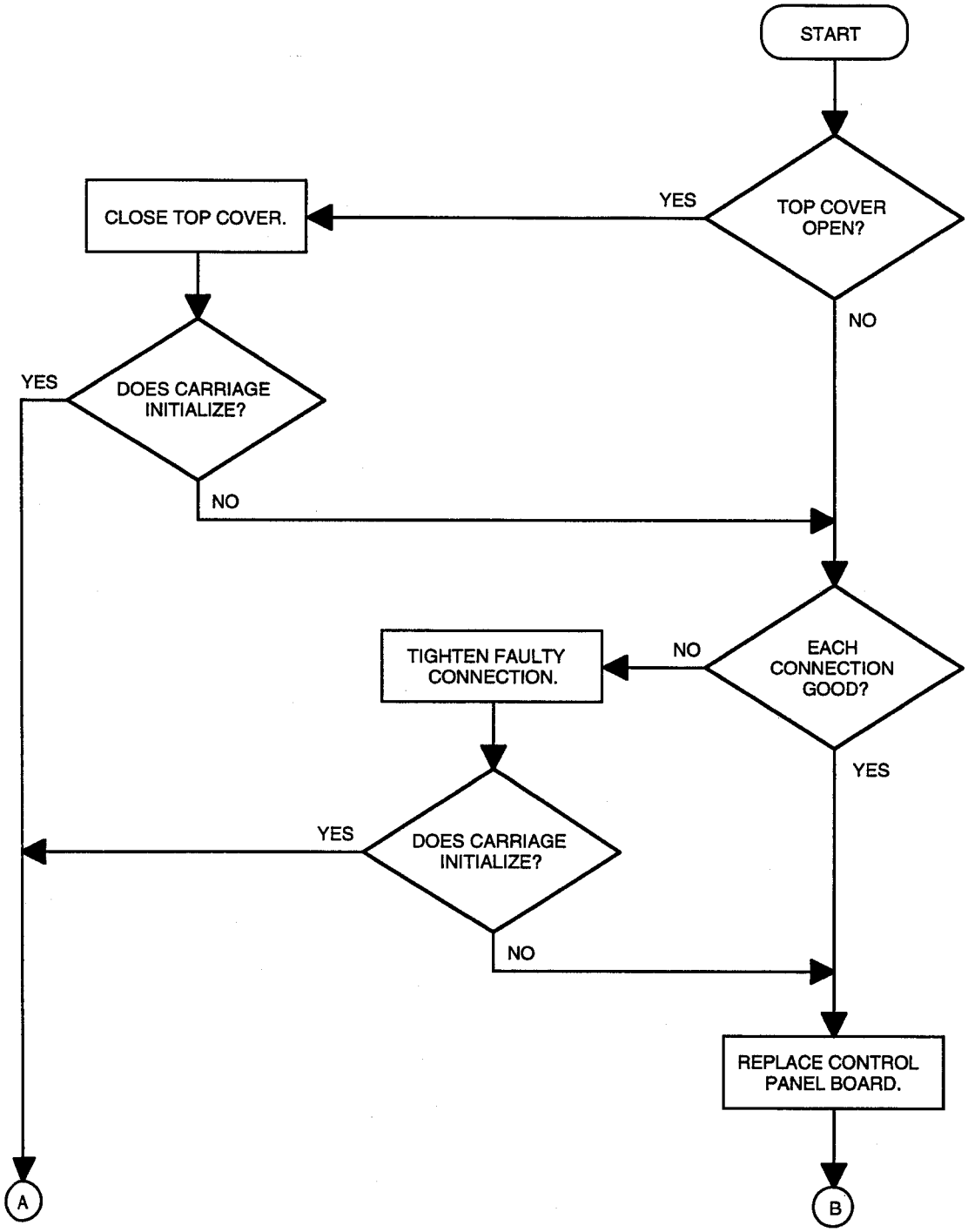


Figure 5-5 Carrier Does Not Initialize (1/2)

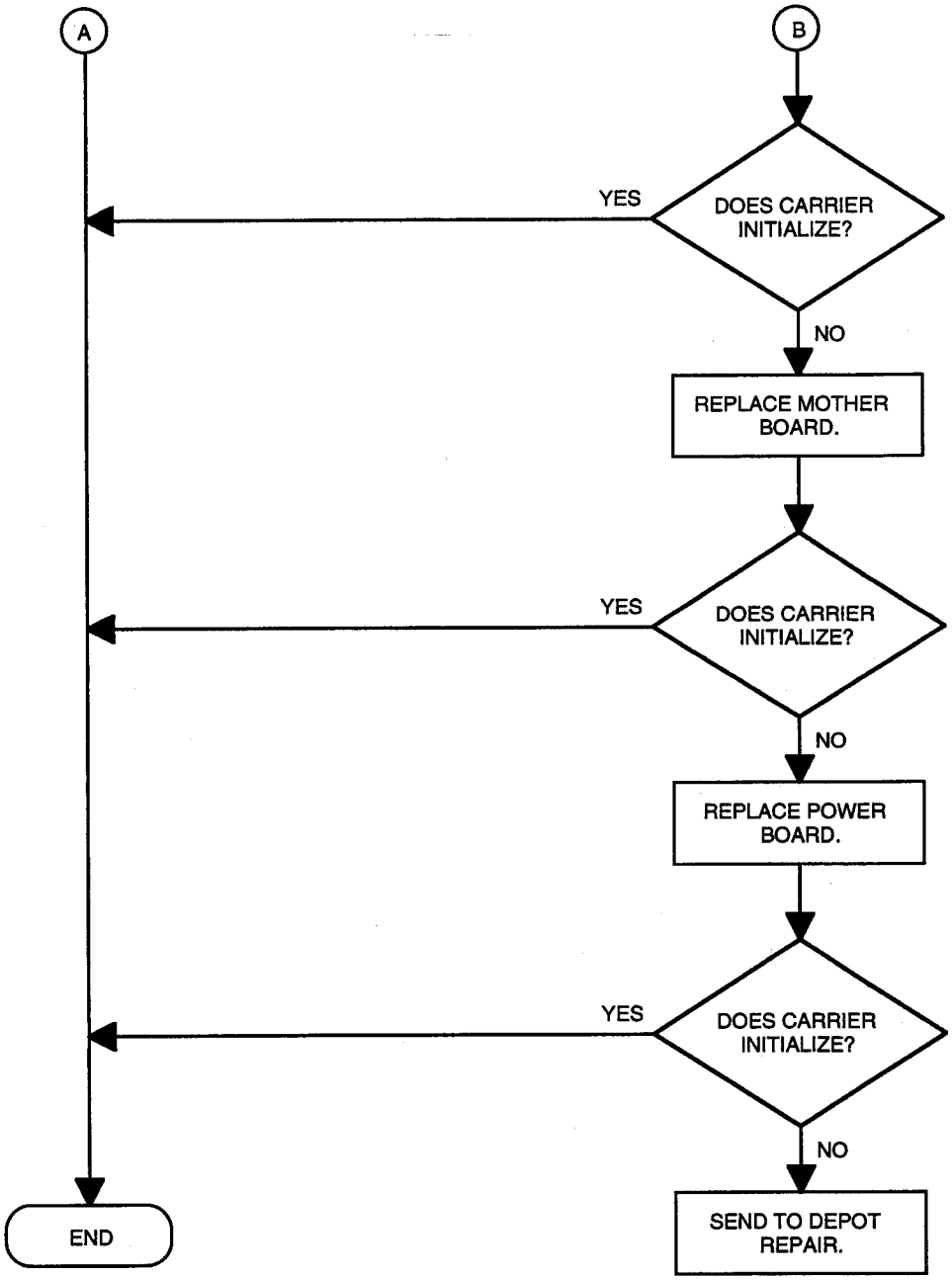


Figure 5-5 Carrier Does Not Initialize (2/2)

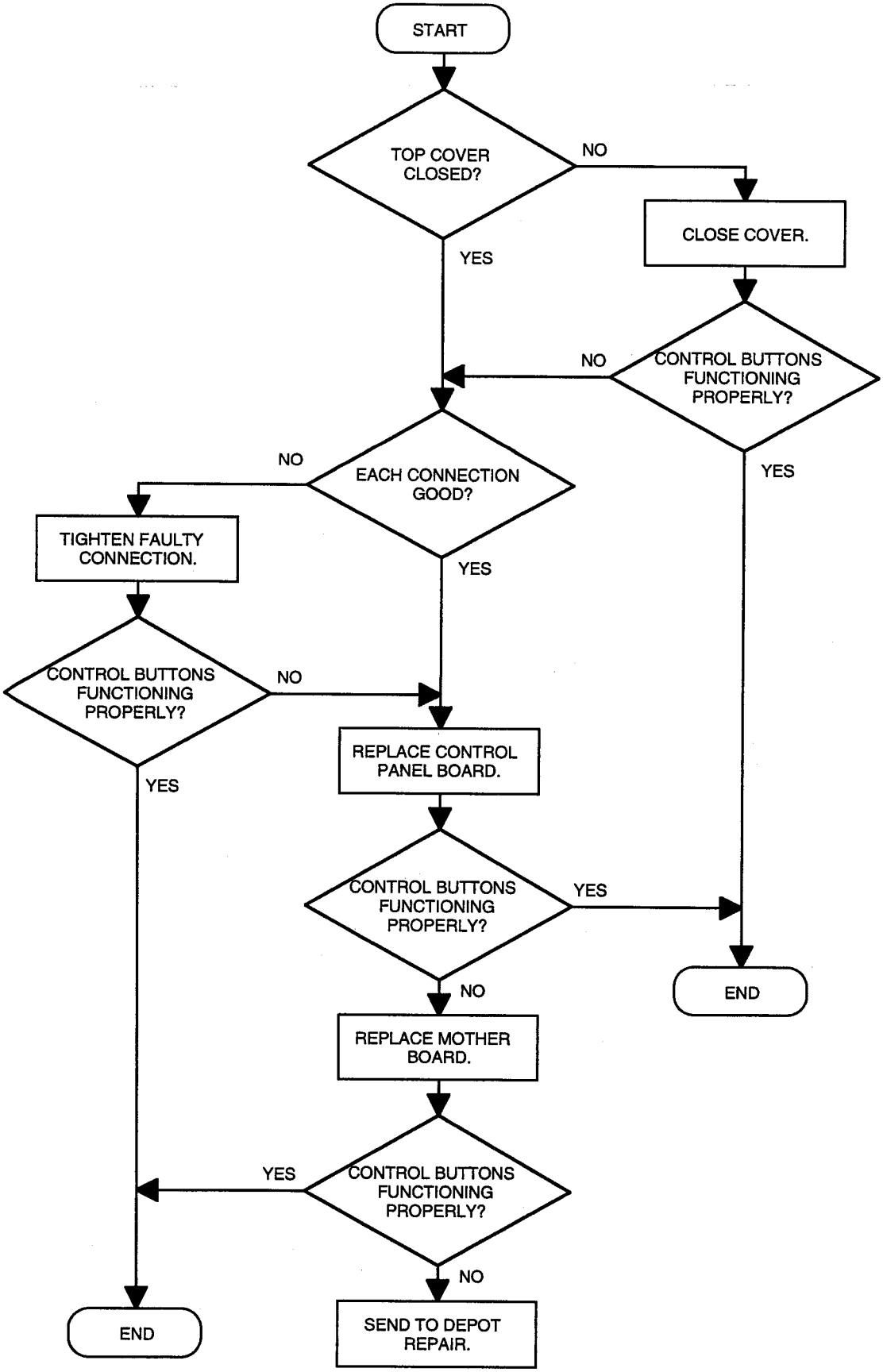


Figure 5-6 Control Panel Buttons Do Not Function Properly

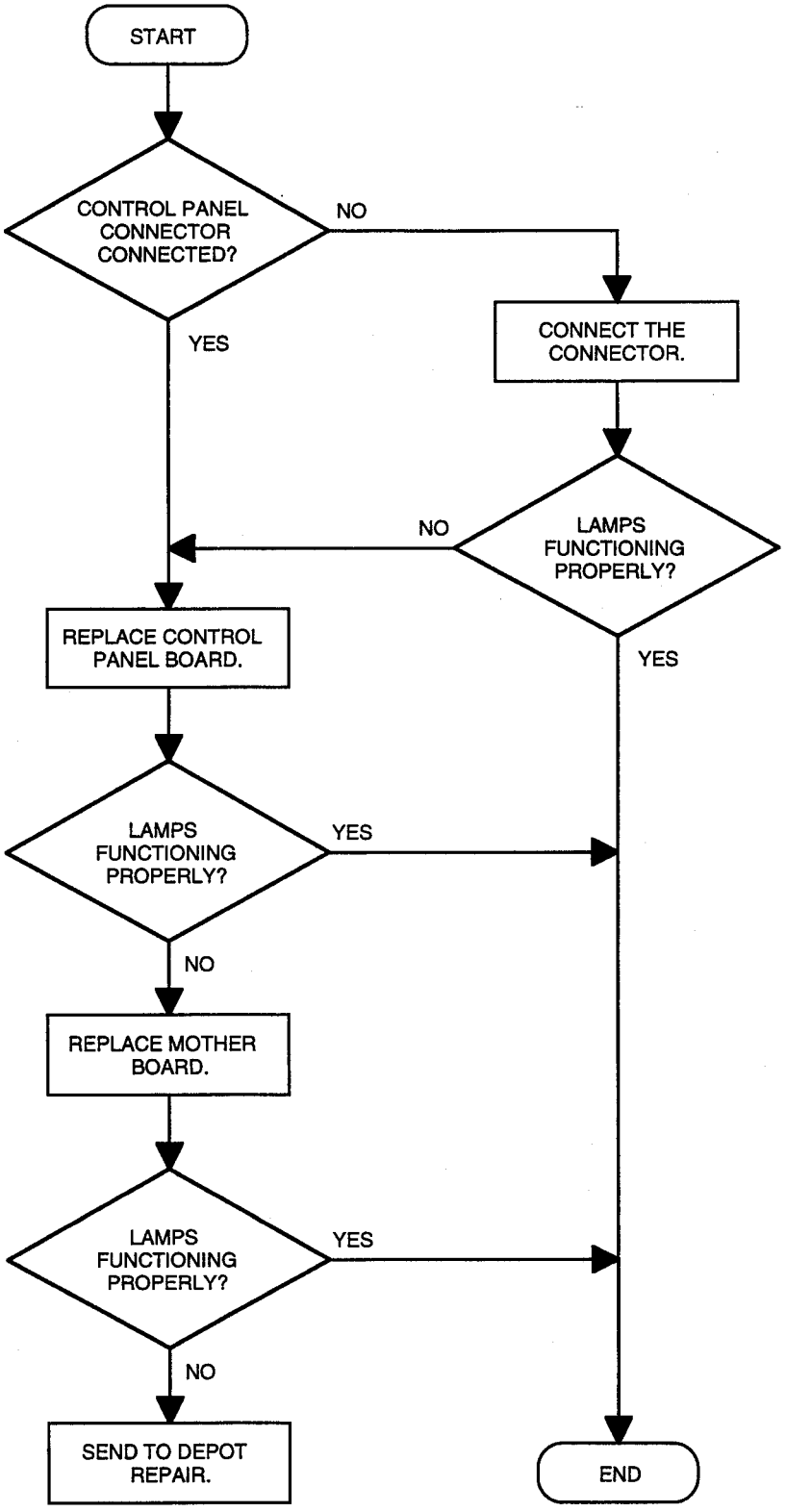


Figure 5-7 Control Panel Lamps Do Not Function Properly

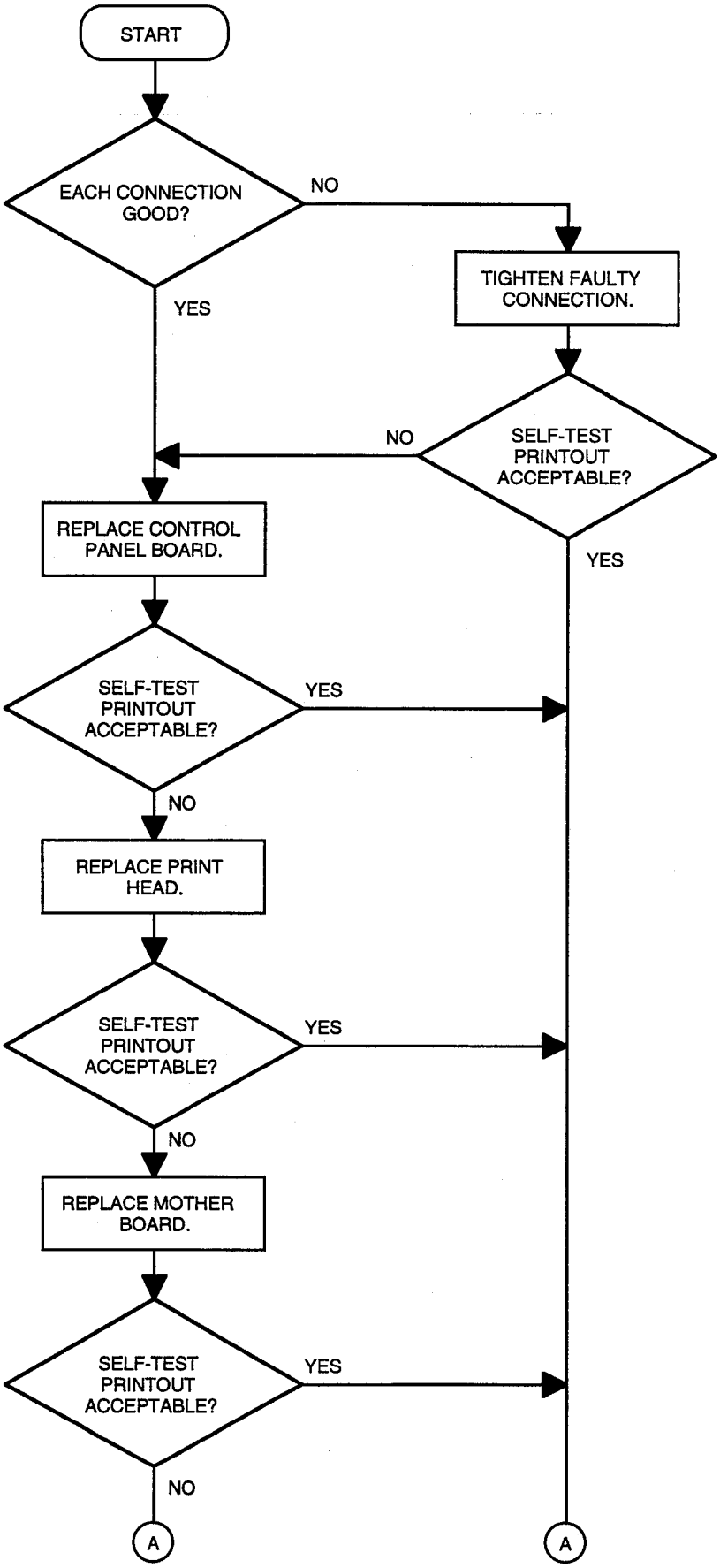


Figure 5-8 Self-Test Printout Is Abnormal (1/2)

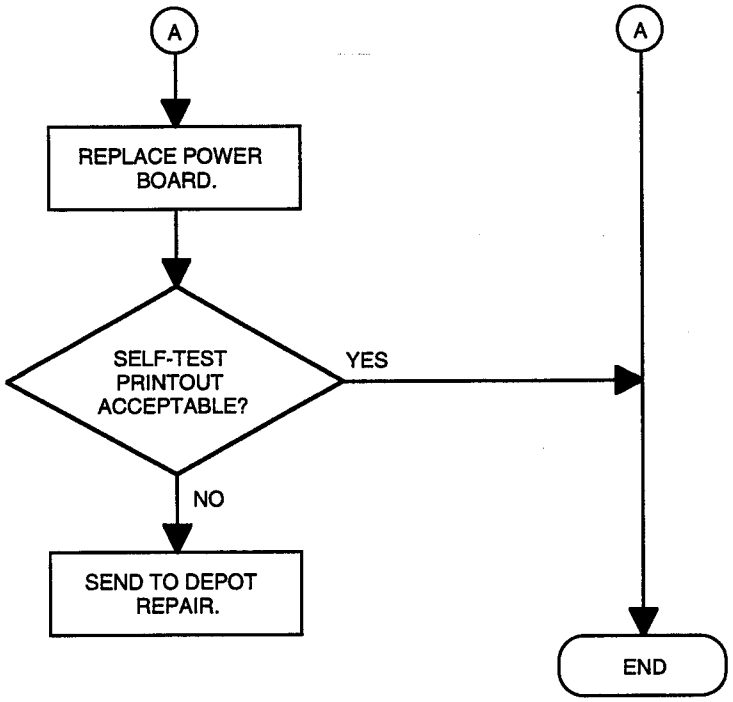


Figure 5-8 Self-Test Printout Is Abnormal (2/2)

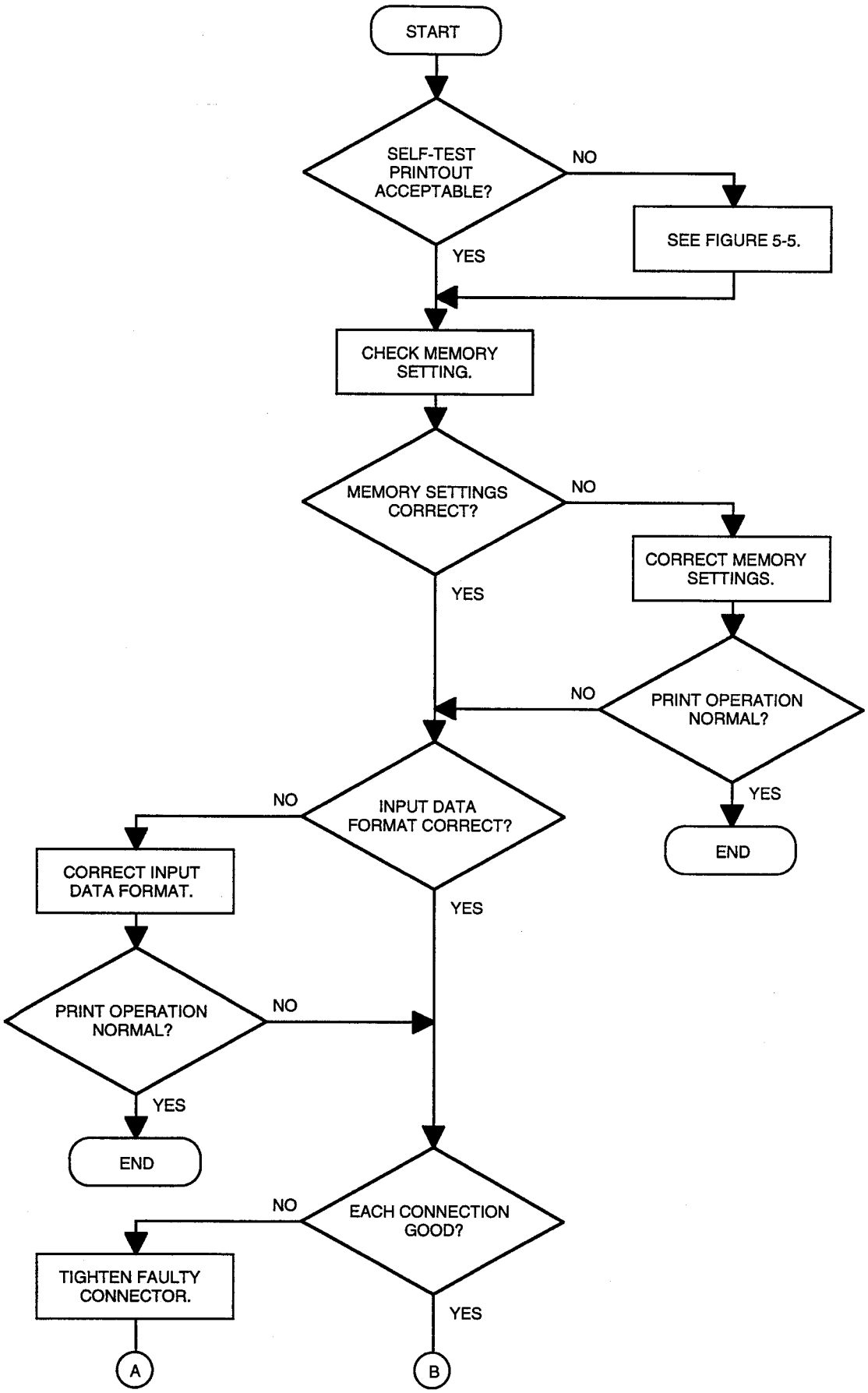


Figure 5-9 On-Line Printing Using the Serial Interface Is Abnormal (1/2)

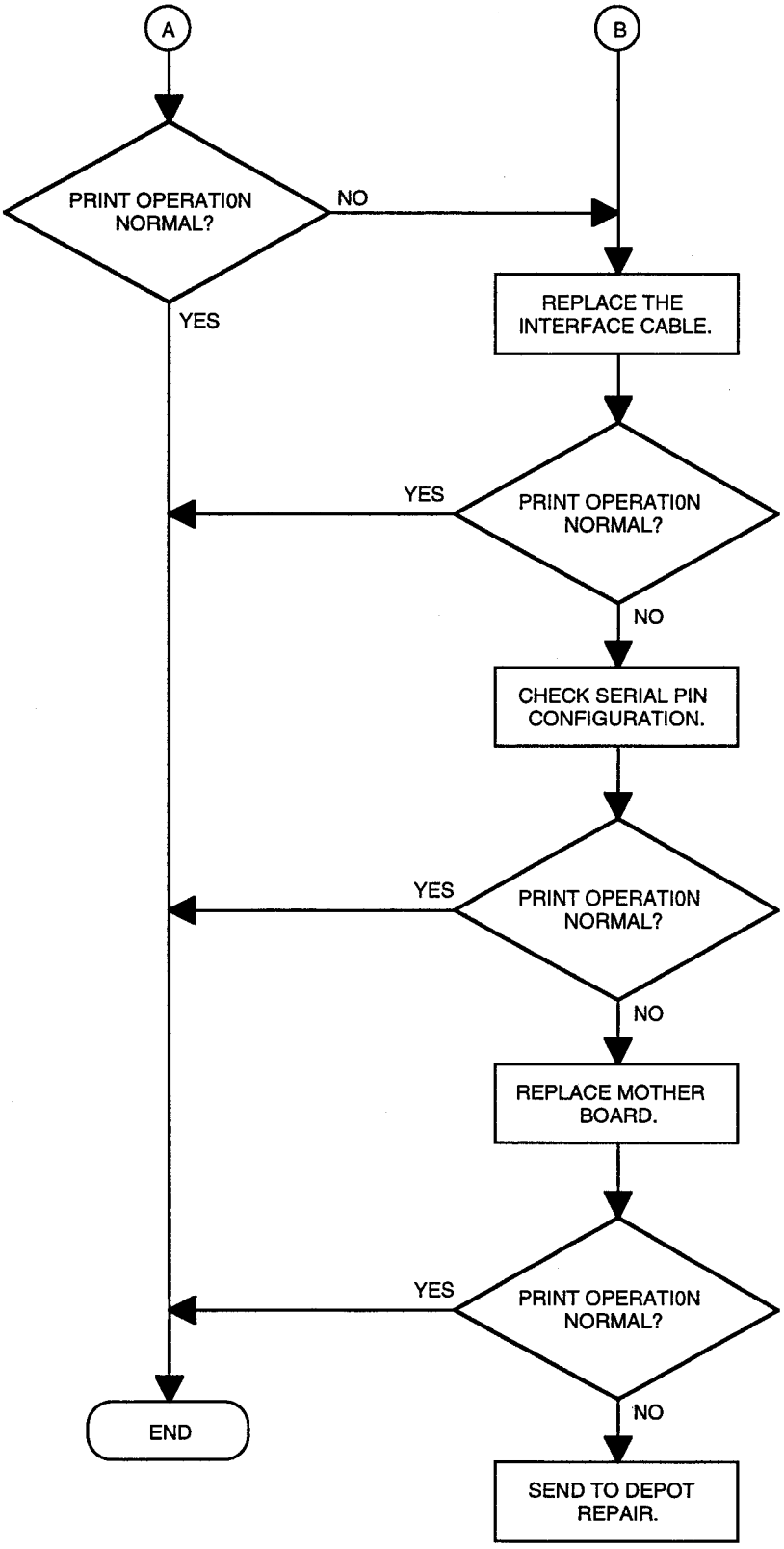


Figure 5-9 On-Line Printing Using the Serial Interface Is Abnormal (2/2)

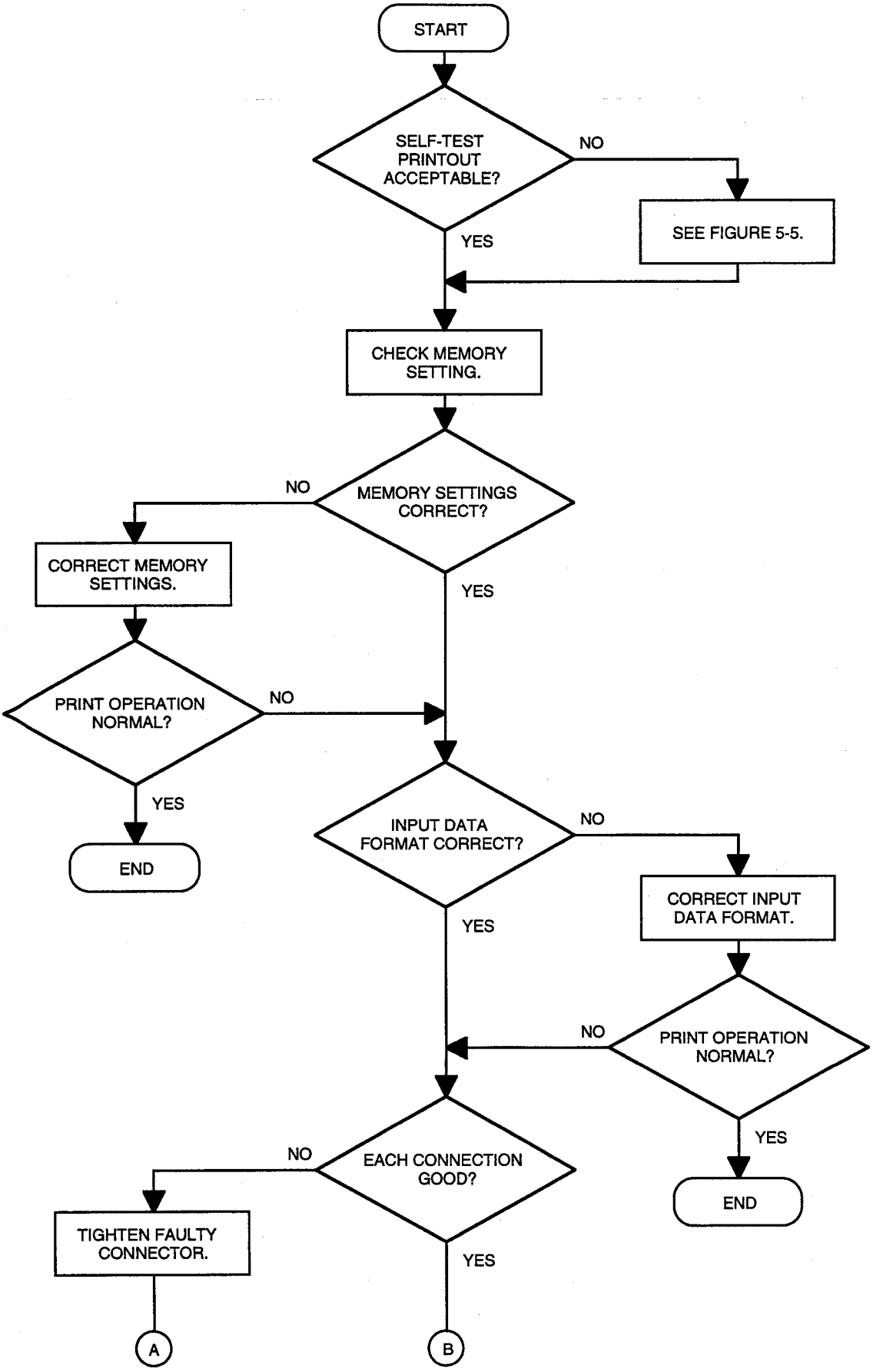


Figure 5-10 On-Line Printing Using the Parallel Interface Is Abnormal (1/2)

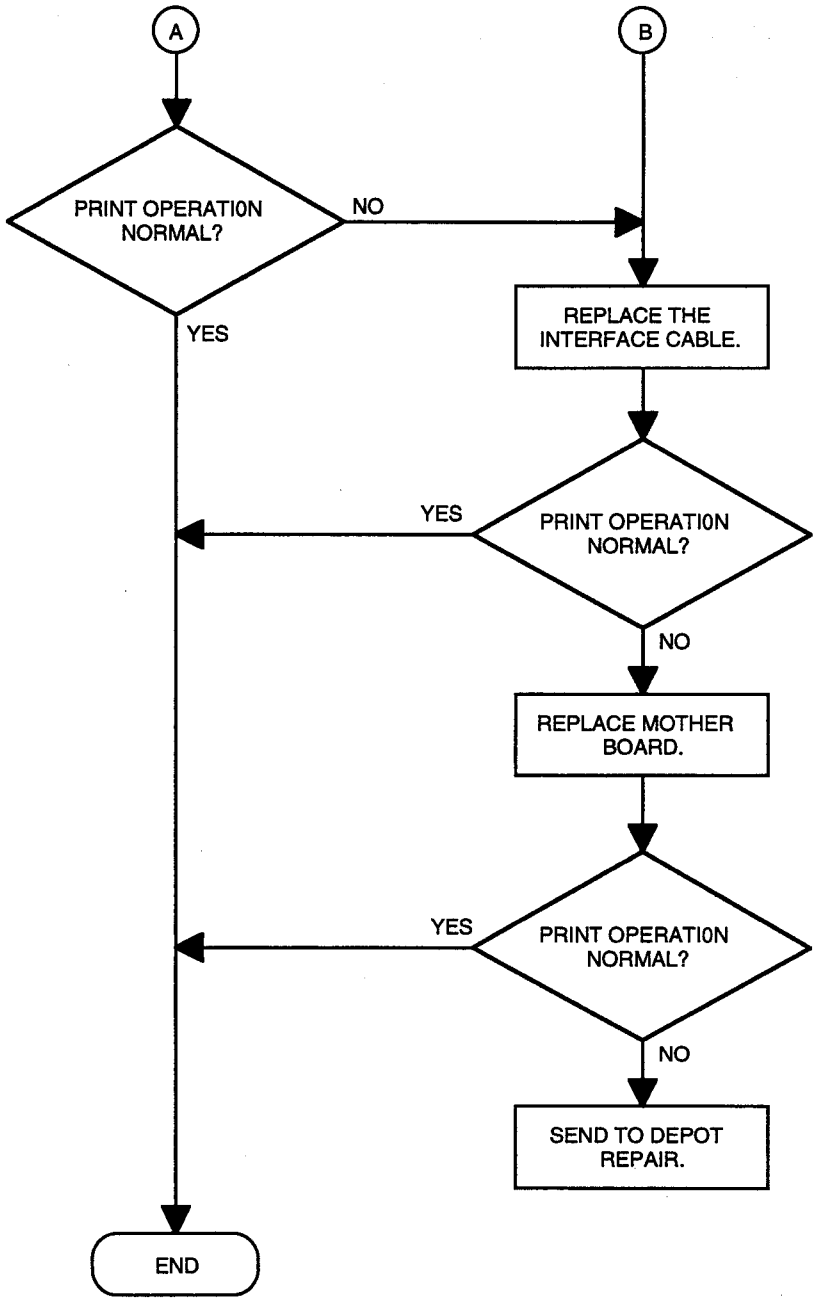


Figure 5-10 On-Line Printing Using the Parallel Interface Is Abnormal (2/2)

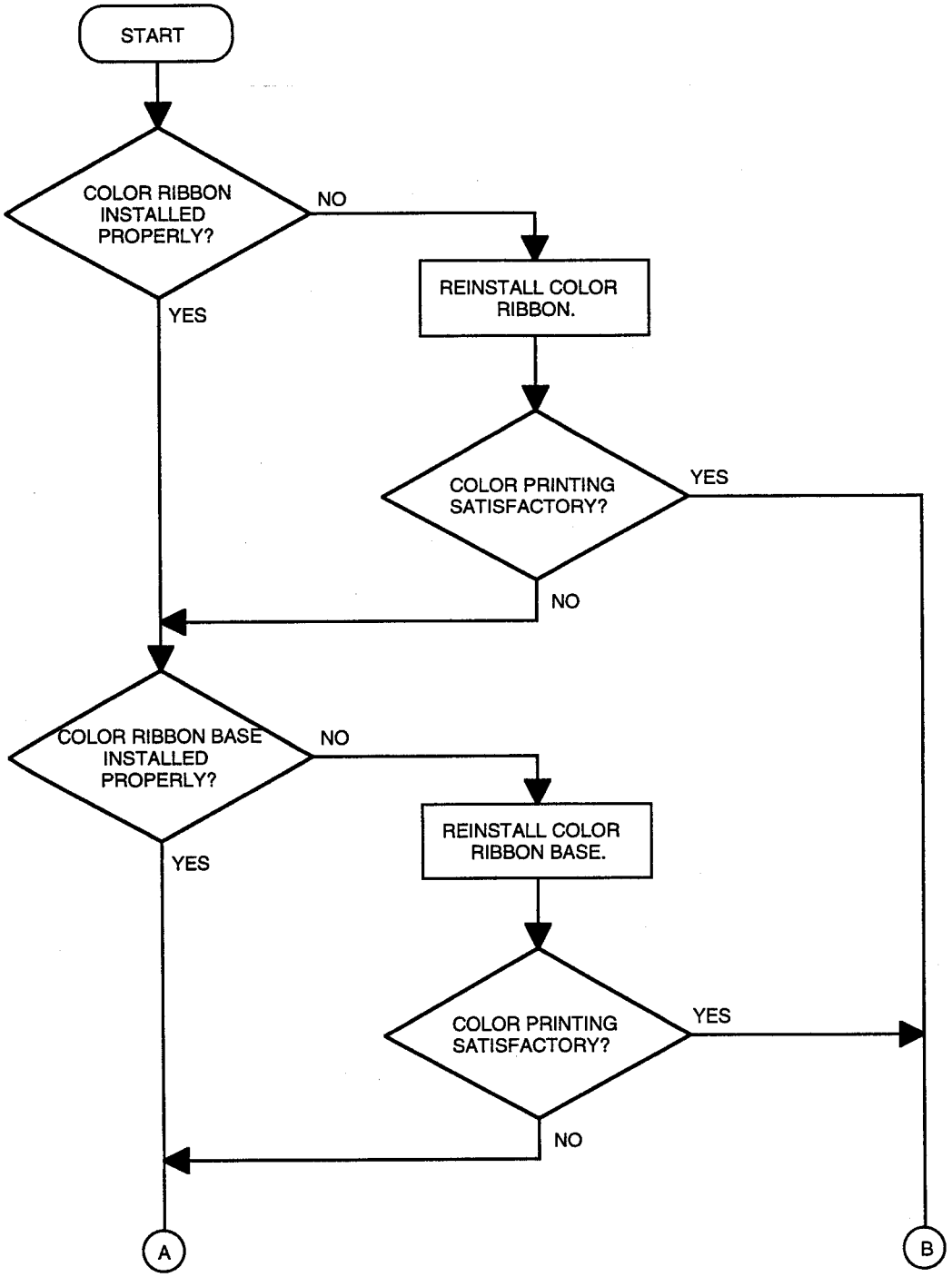


Figure 5-11 Color Printing Is Abnormal (1/2)

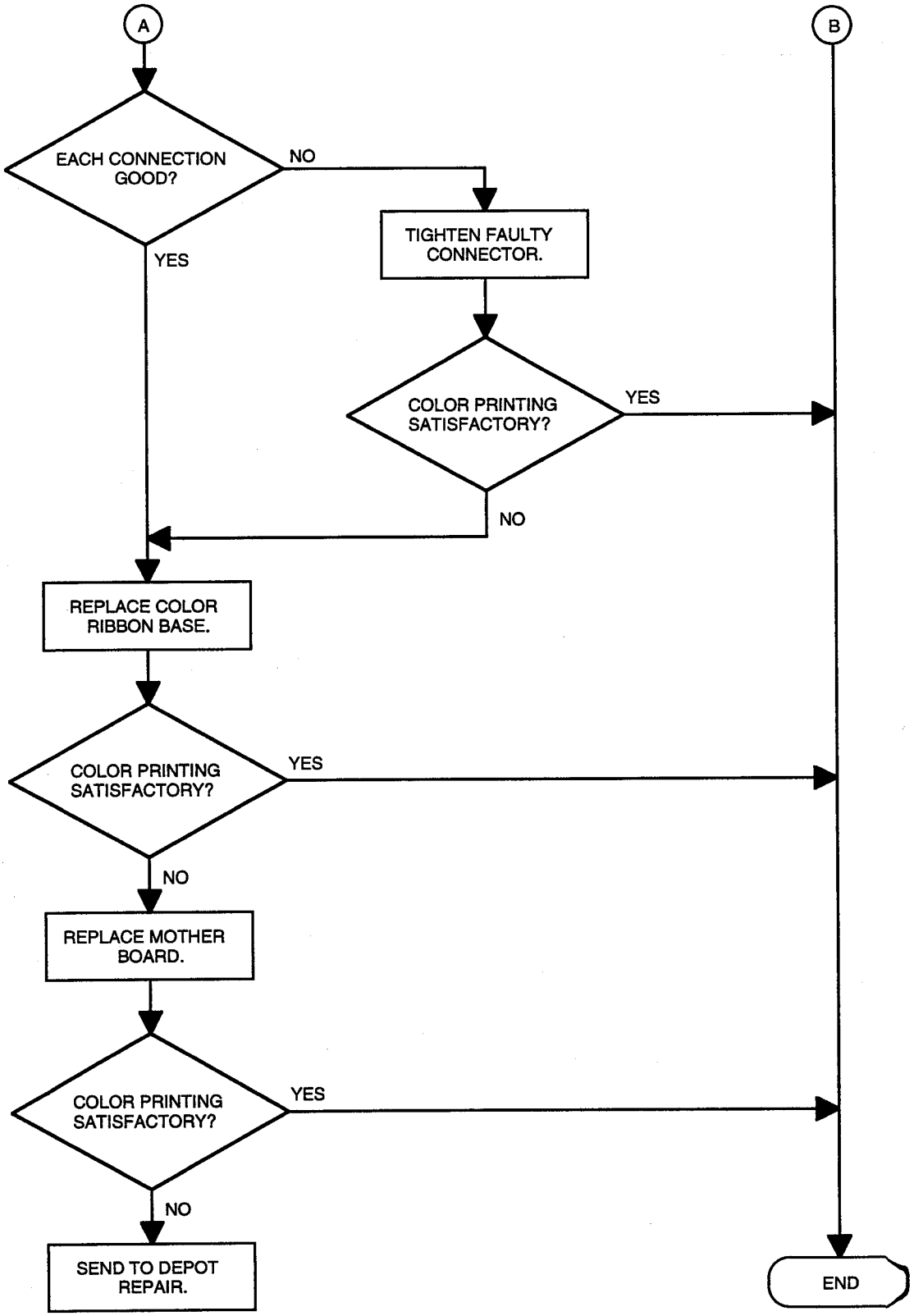


Figure 5-11 Color Printing Is Abnormal (2/2)

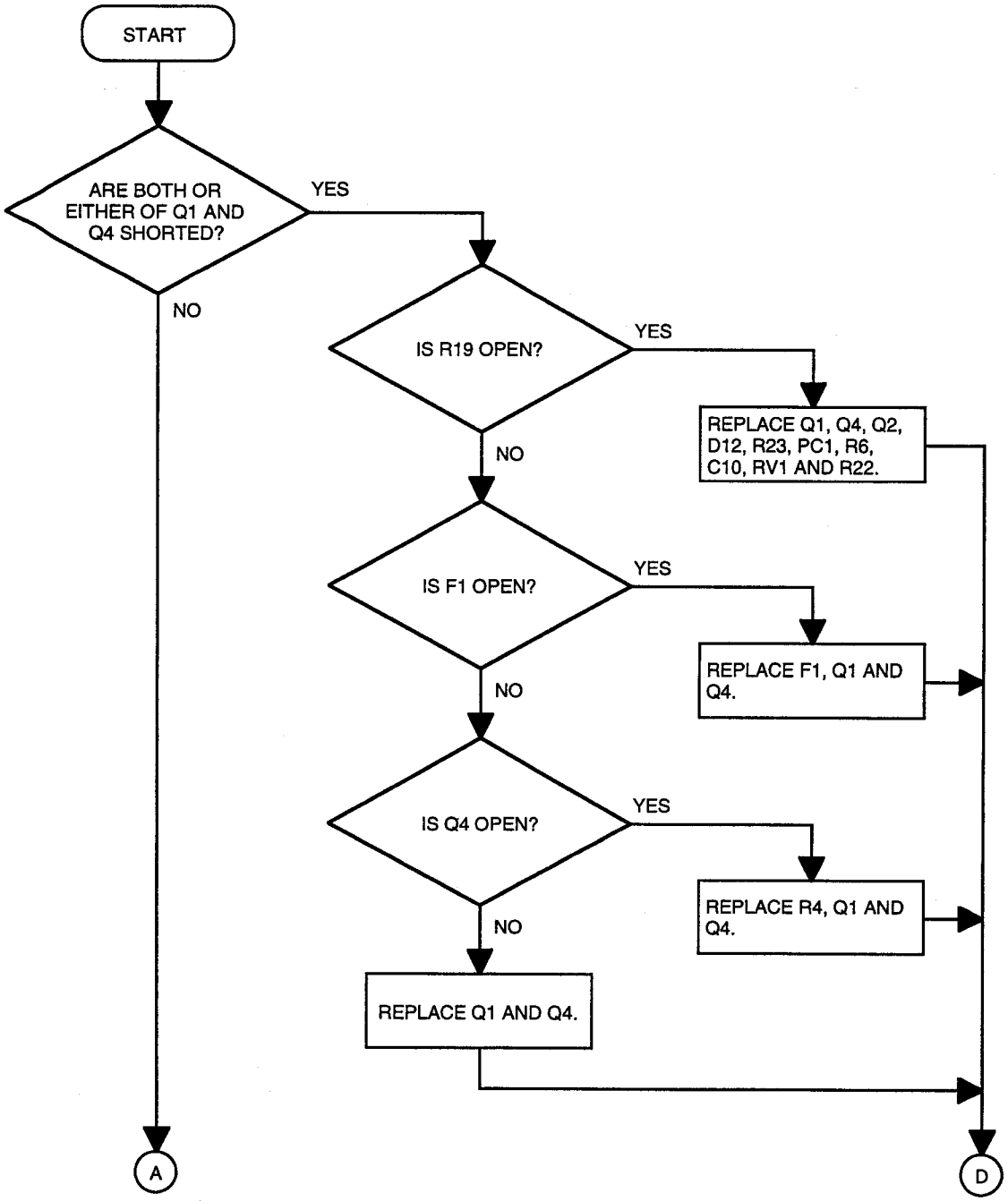


Figure 5-12 PSD Power (C) Is Faulty (1/4)

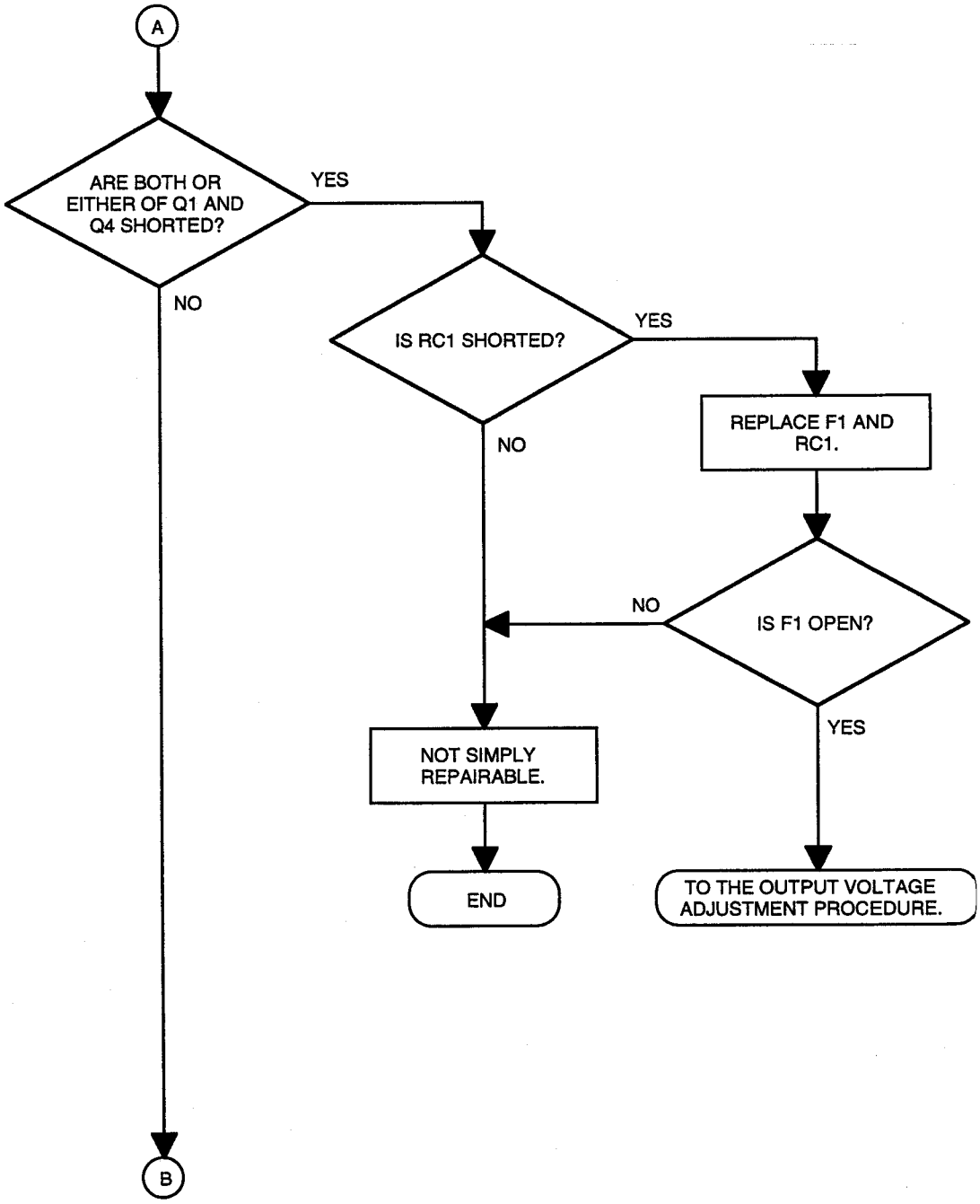


Figure 5-12 PSD Power (C) Is Faulty (2/4)

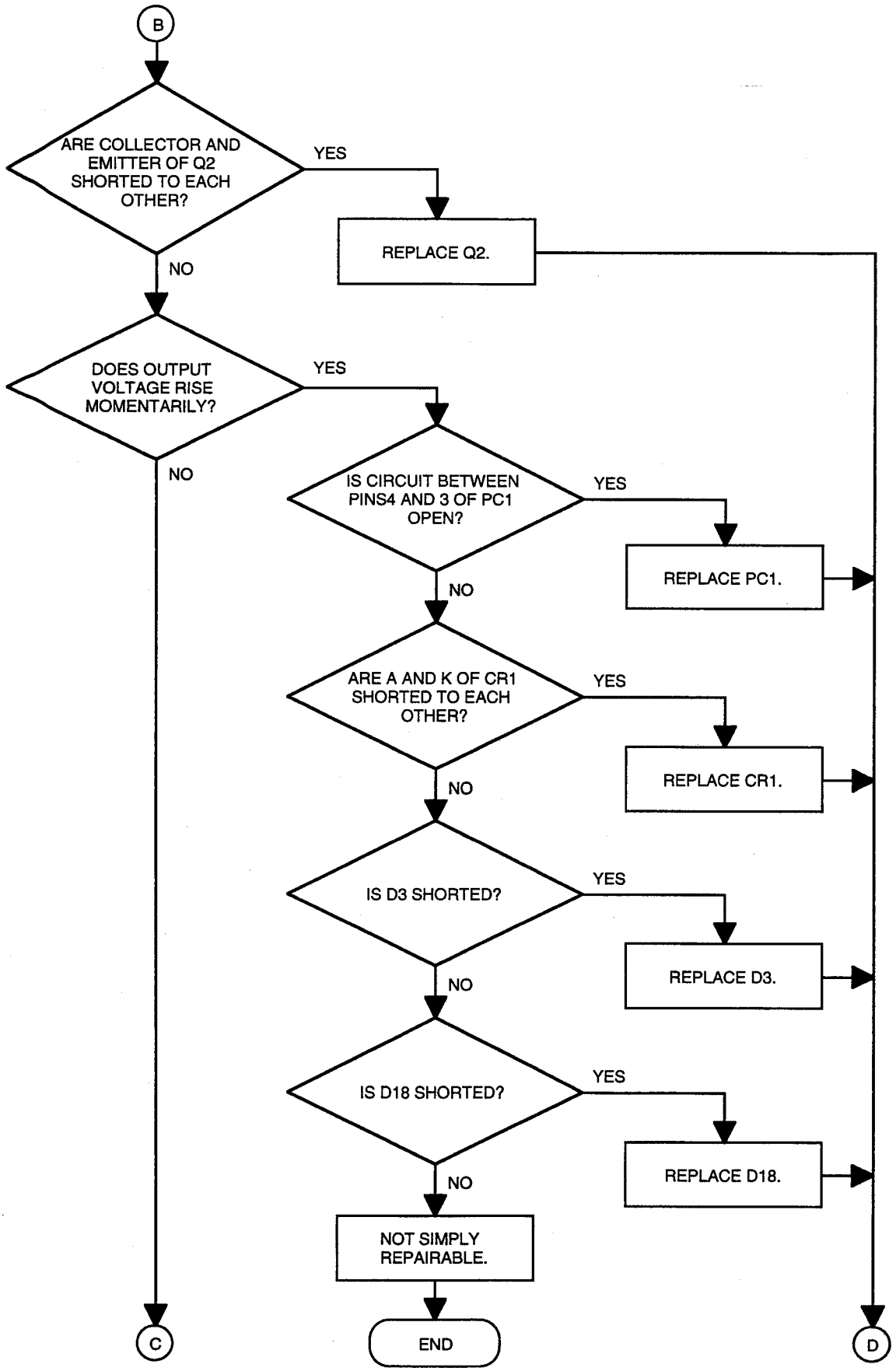


Figure 5-12 PSD Power (C) Is Faulty (3/4)

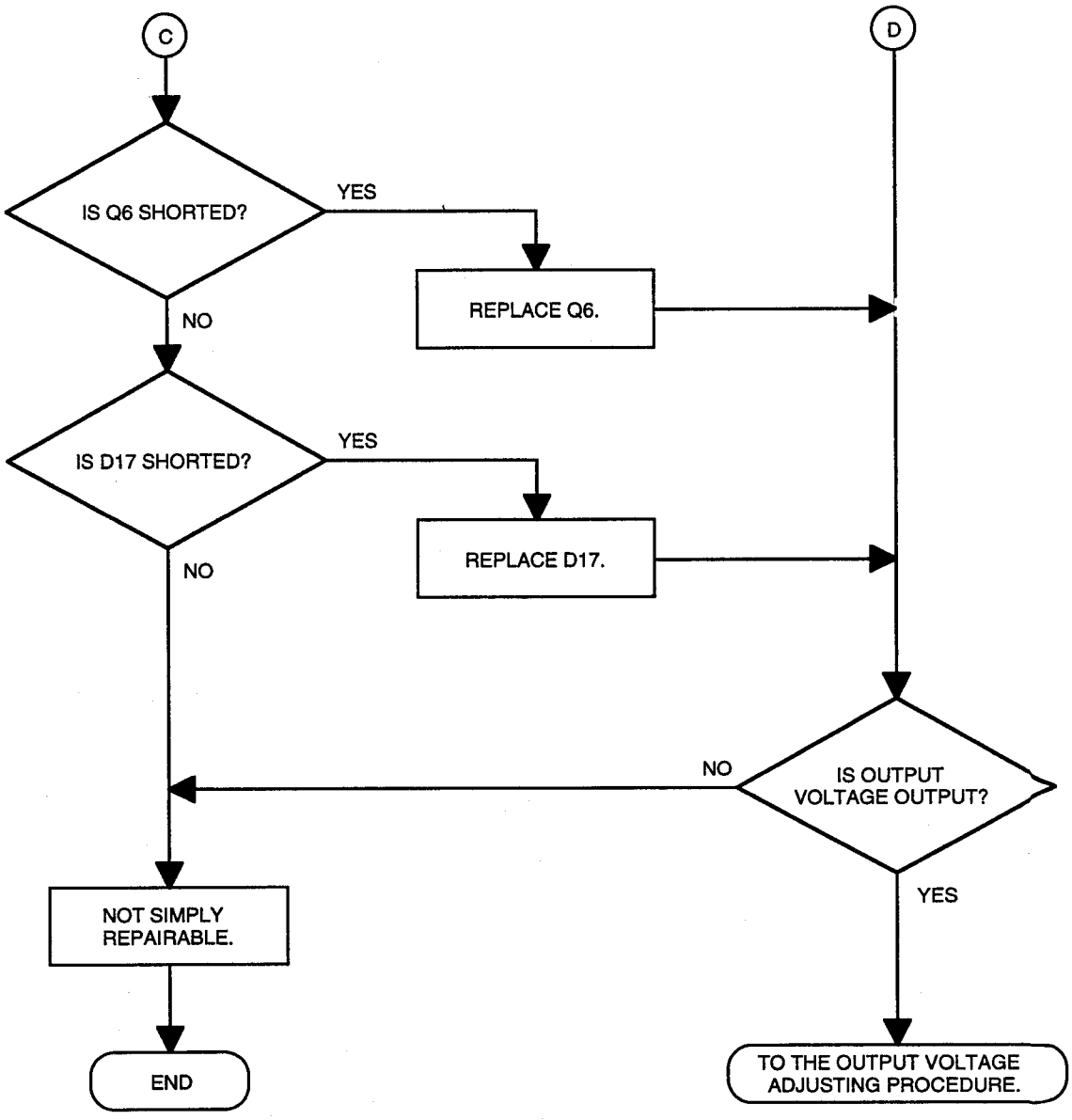
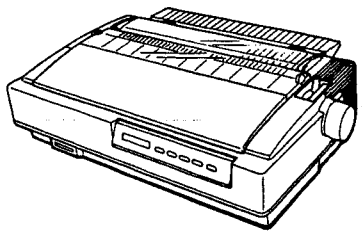


Figure 5-12 PSD Power (C) Is Faulty (4/4)

Section 6

Parts Removal and Installation



This section provides parts removal and installation procedures for the Pinwriter. Unless otherwise noted, install a part by simply reversing the removal procedure. Section 6 lists order numbers for replacement parts.

Observe the following rules when disassembling the Pinwriter.

- Turn off and unplug the printer.
- Remove any paper handling options and/or RS-232C interface board that may be attached to the printer.
- Do not disassemble units into parts that are smaller than replacement units.
- Grasp a connector by its sides to remove it; do not pull on the wire harness that is attached to the connector.
- Perform the removal procedures in the sequence given.

WARNING

Always disconnect the power cord before performing any maintenance or adjustment procedure on the Pinwriter. Voltage is present inside the printer even after power is turned off. Only when the power cord is disconnected is all voltage removed.

The following tools are required to remove or install Pinwriter parts:

- #2 Phillips screwdriver
- Flat-blade screwdriver
- Round-nose pliers
- Tweezers
- Thickness gauge
- 14 mm nut driver

SHEET GUIDE COVER REMOVAL

Follow these steps to remove the sheet guide cover.

1. Open the sheet guide cover and slide it towards the back of the printer (see Figure 6-1).
2. Holding the sheet guide with both hands, warp it and release the left pivot off the sheet guide (see Figure 6-2).
3. Remove the sheet guide cover by sliding it to the left.

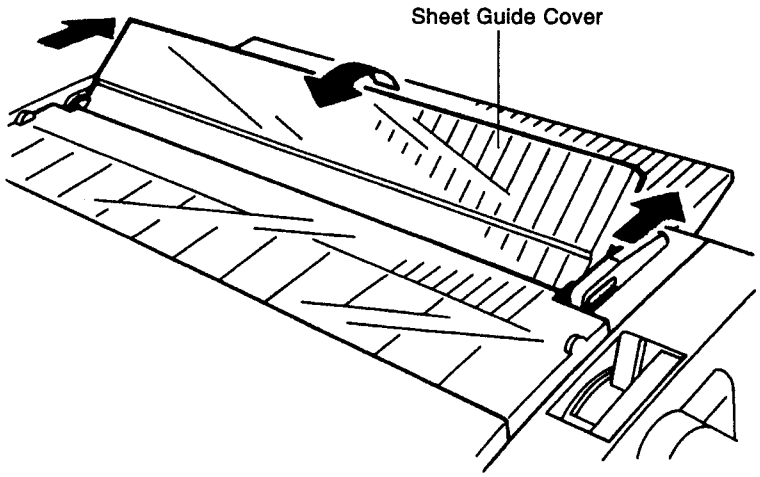


Figure 6-1 Sheet Guide Cover

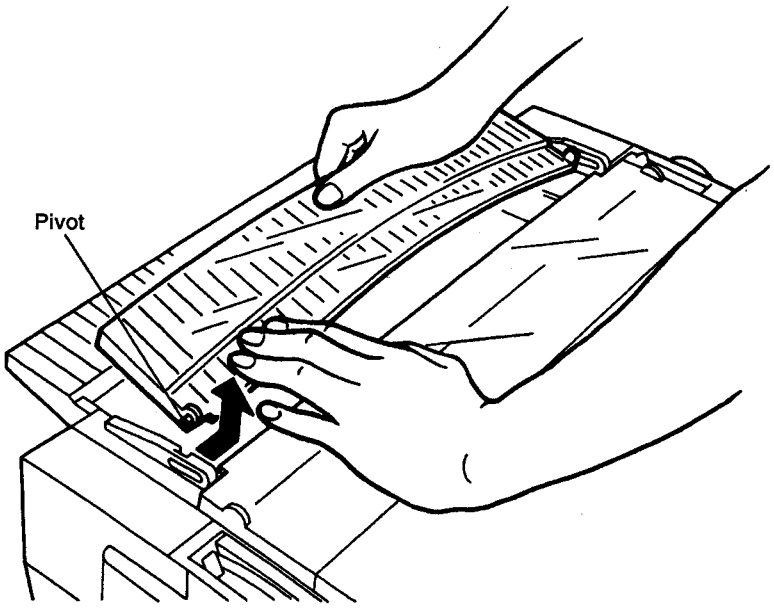


Figure 6-1 Sheet Guide Cover Pivot

TOP COVER ASSEMBLY REMOVAL

Follow these steps to remove the top cover assembly.

1. Open the top cover assembly by lifting it toward you (see Figure 6-3).
2. Lift the both corners up and away from the printer.

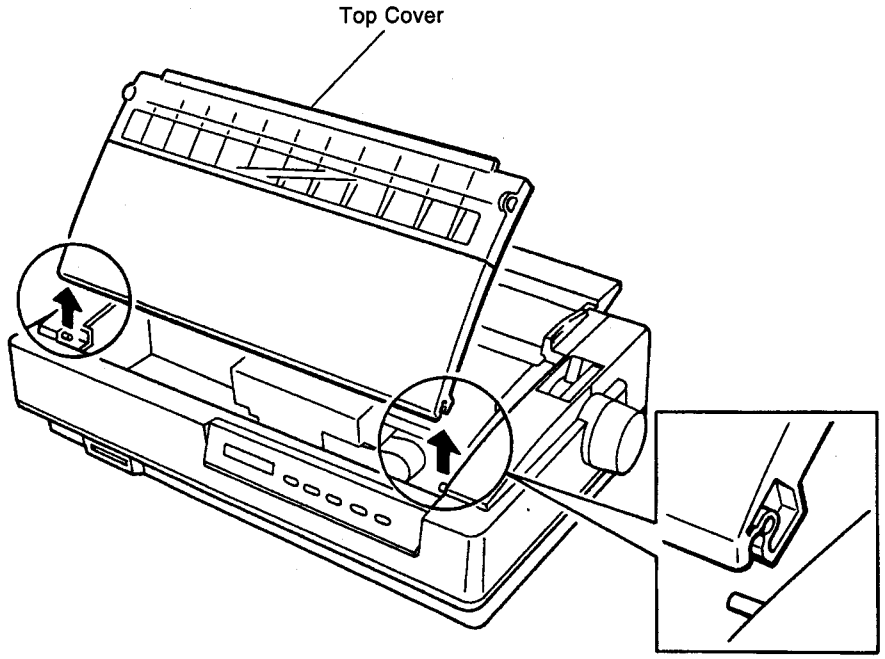


Figure 6-3 Top Cover Assembly

CONTROL PANEL ASSEMBLY REMOVAL

The remove the control panel assembly, first remove the top cover assembly. Then proceed as follows.

1. Move the carrier to the left side of the printer.
2. Remove the two screws on the ROM cover and lift the cover out of the printer (see Figure 6-4).
3. Pull up both ends of the connector lock of CN7 (see Figure 6-5).
4. Remove the control panel cable from the unlocked connector.
5. With a screwdriver blade, unlock the three locking tabs and pull the control panel forward (see Figure 6-6).
6. Open and lift the control panel out of the printer (see Figure 6-7).

NOTE

When replacing the control panel assembly, insert the control panel cable to connector CN7 with its blue marking faces back of the printer.

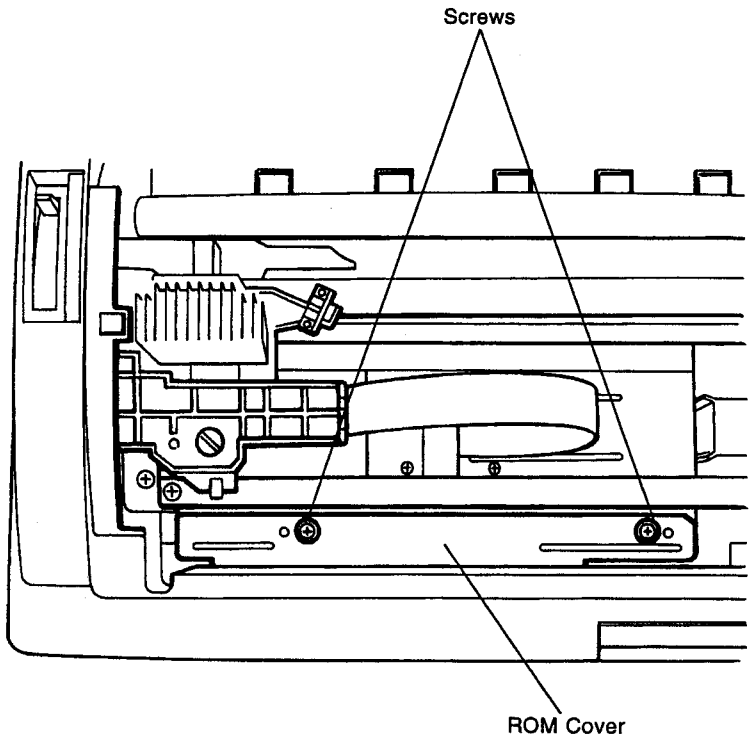


Figure 6-4 ROM Cover

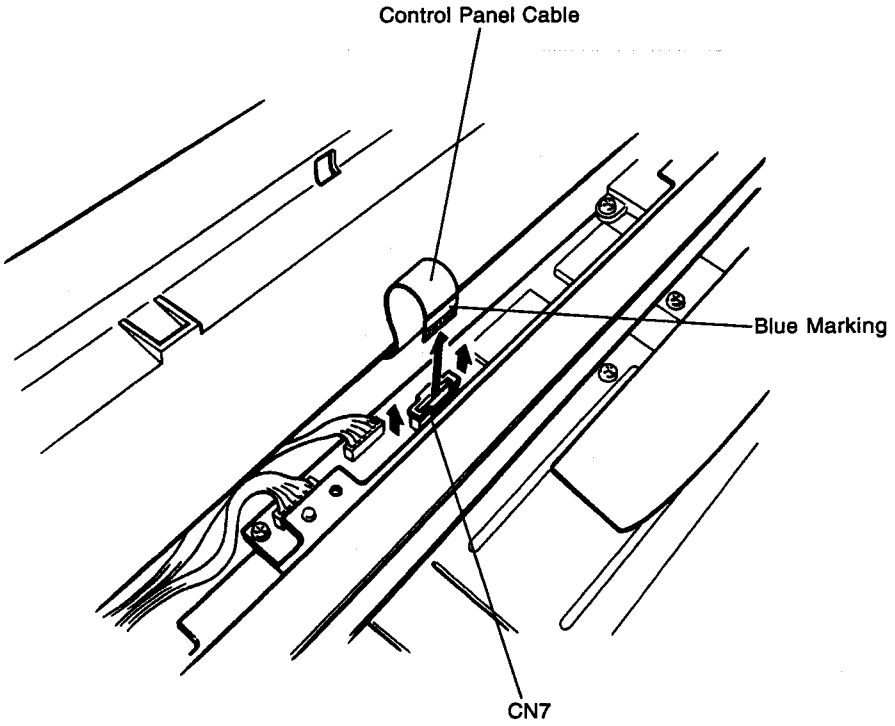


Figure 6-5 Control Panel Cable

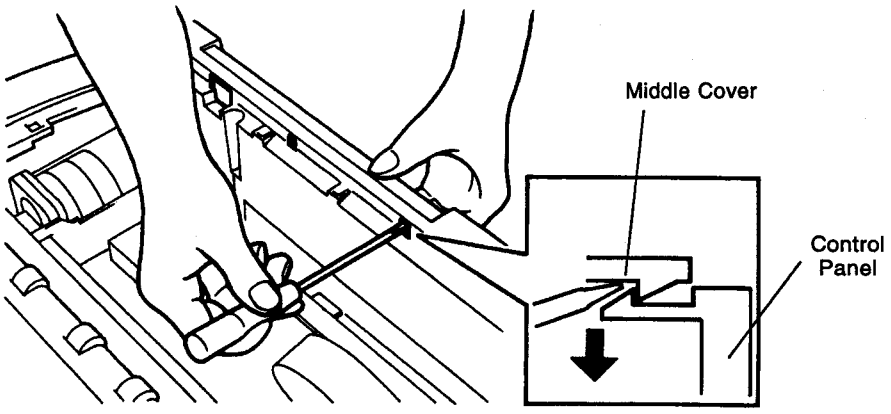


Figure 6-6 Control Panel Locking Tab

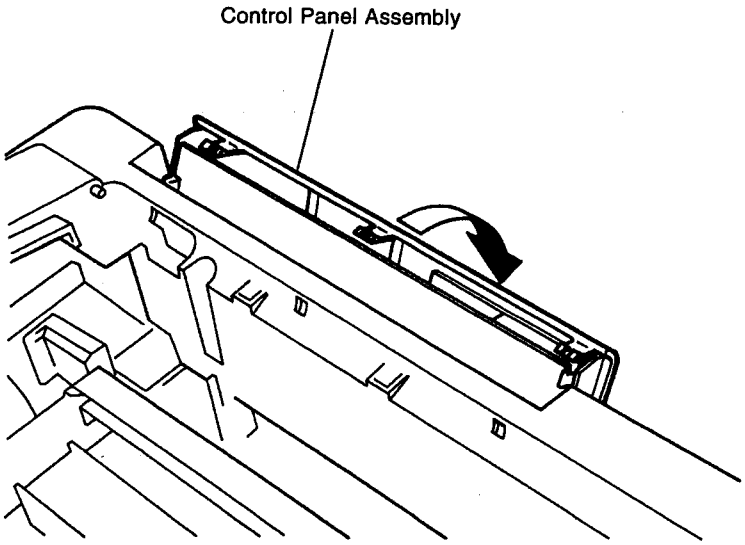


Figure 6-7 Control Panel Assembly Removal

MIDDLE COVER ASSEMBLY REMOVAL

To remove the middle cover assembly, first remove the top cover assembly. Then proceed as follows.

1. Set the paper selection lever to the rear of the printer.
2. Pull off the platen knob.
3. Remove the two screws on the ROM cover and lift the cover out of the printer (see Figure 6-4).
4. Pull up both ends of the connector lock of CN7.
5. Remove the cable from the unlocked connector (see Figure 6-5).
6. Loosen the two screws on the middle cover (see Figure 6-8).
7. Lift up the front side of the middle cover and remove it from the printer.

NOTE

When replacing the middle cover assembly, make sure the hooks (P62: 16 places, P72; 16 places) of the middle cover are fit in the slots of the printer base (see Figure 6-9).

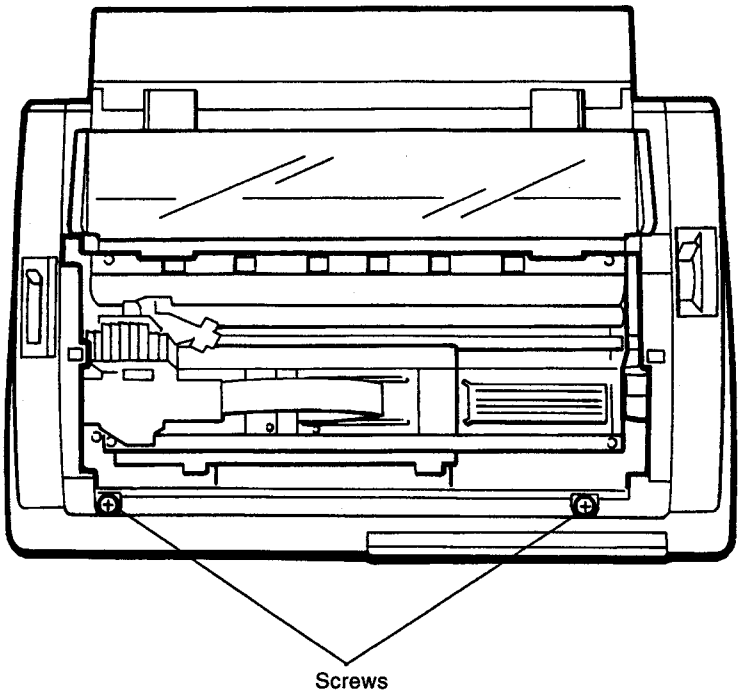


Figure 6-8 Midle Cover Assembly Removal

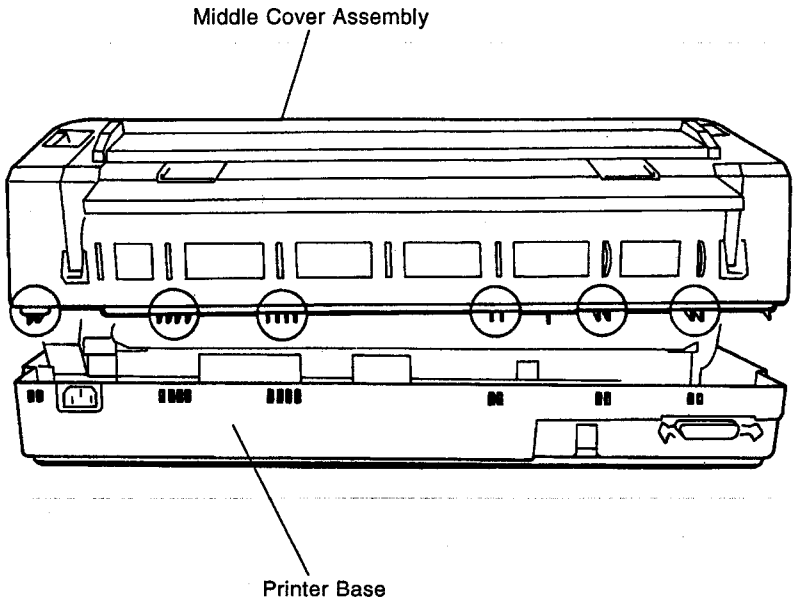


Figure 6-9 Middle Cover Hooks (Model P62)

PRINT HEAD ASSEMBLY REMOVAL

1. Open the top cover, and remove the ribbon cartridge.
2. Slide the sheet guide assembly backward until it stops (see Figure 6-10).
3. Open and hold the sheet guide upright, then lift it off the printer (see Figure 6-11).
4. Open the bail roller guide (see Figure 6-12).
5. Move the carrier assembly to the center of the unit.
6. Unlock the clamp levers by pulling them outward (see Figure 6-13).
7. Lift up the print head (see Figure 6-14).

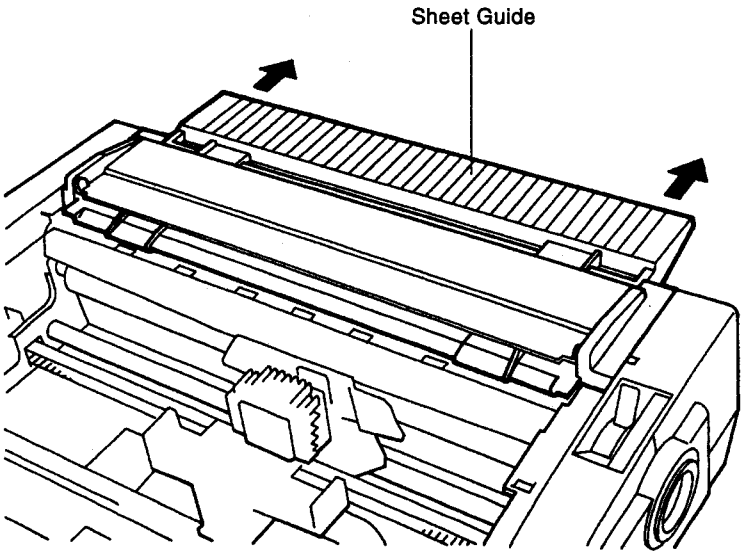


Figure 6-10 Sheet Guide Unlocking

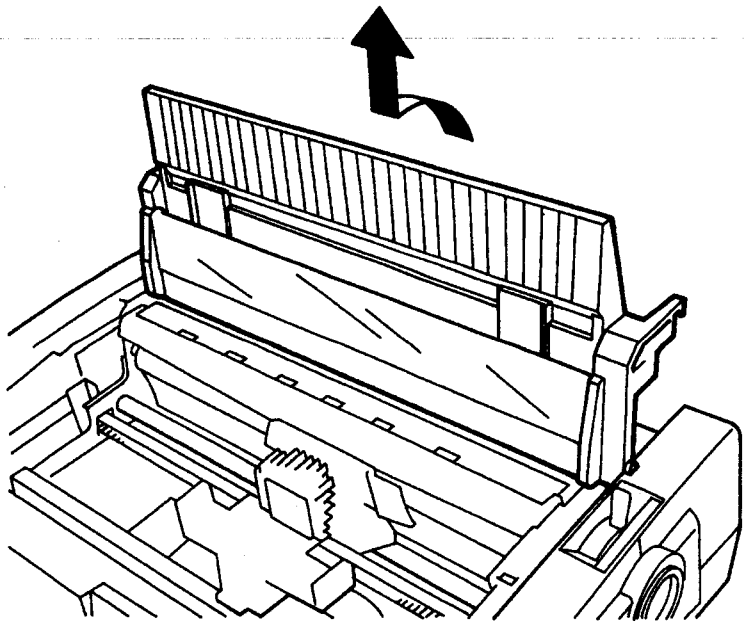


Figure 6-11 Sheet Guide Removal

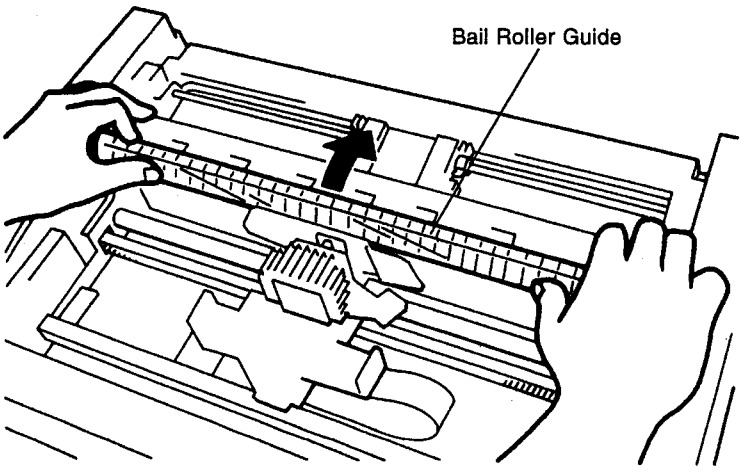


Figure 6-12 Bail Roller Guide

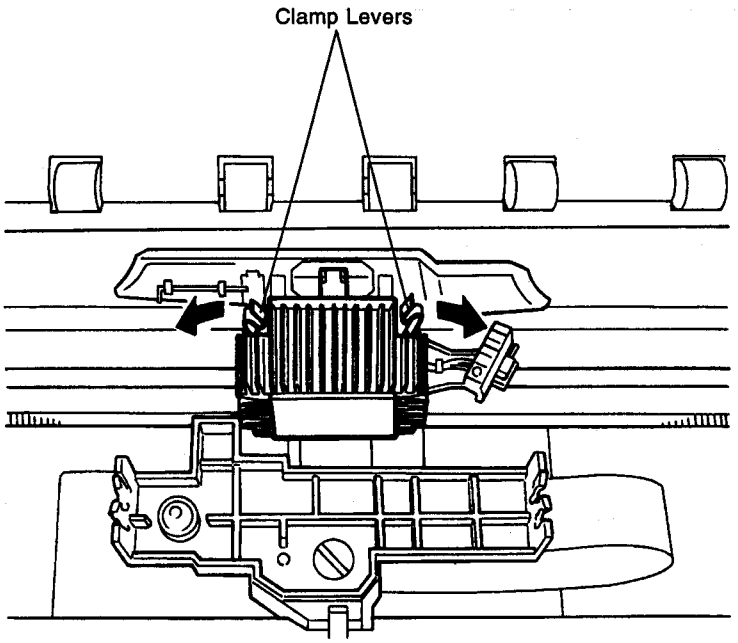


Figure 6-13 Clamp Lever Release

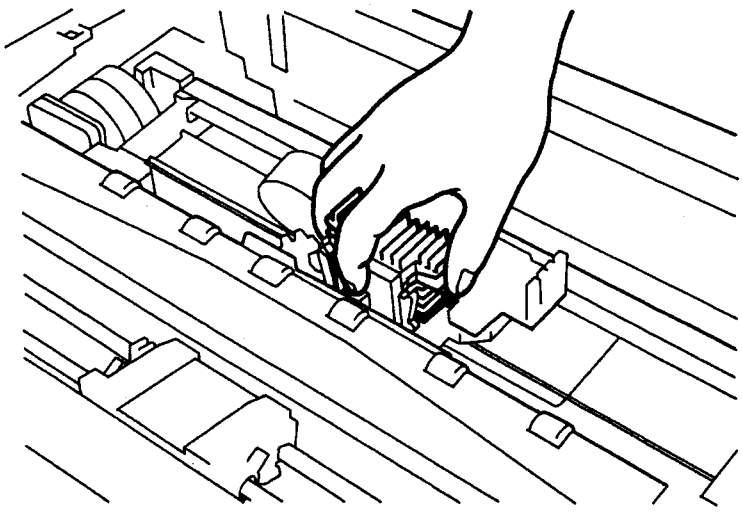


Figure 6-14 Print Head Removal

FEED ROLLER UNIT REMOVAL

To remove the feed roller unit, first remove the top cover assembly and sheet guide assembly. Then proceed as follows.

1. Open the bail roller guide (see Figure 6-15).
2. Grasp the feed roller unit and pull it towards the front of the printer (see Figure 6-16).
3. Lift the right end of the feed roller unit and slide it to the right (see Figure 6-17).

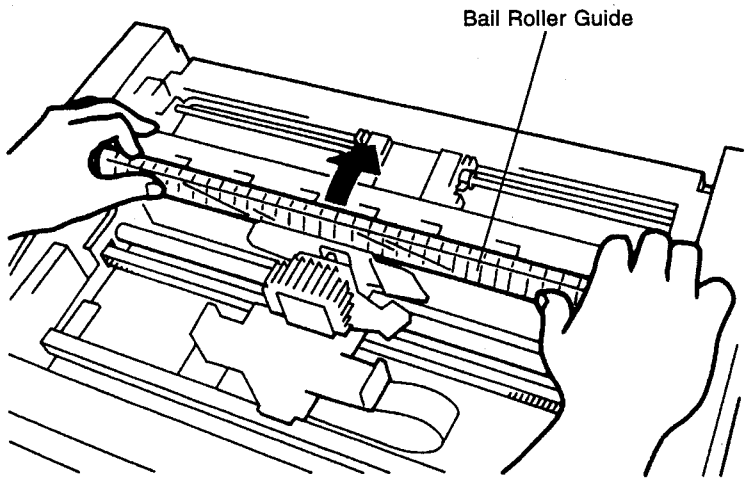


Figure 6-15 Bail Roller Guide

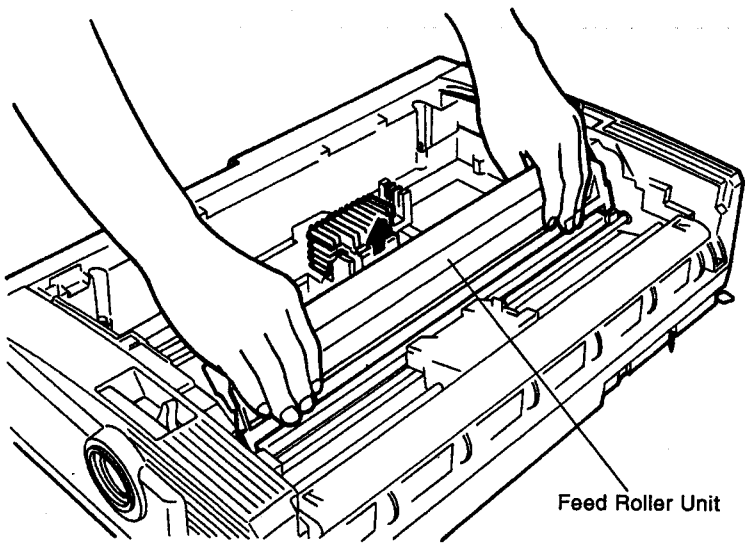


Figure 6-16 Feed Roller Unit

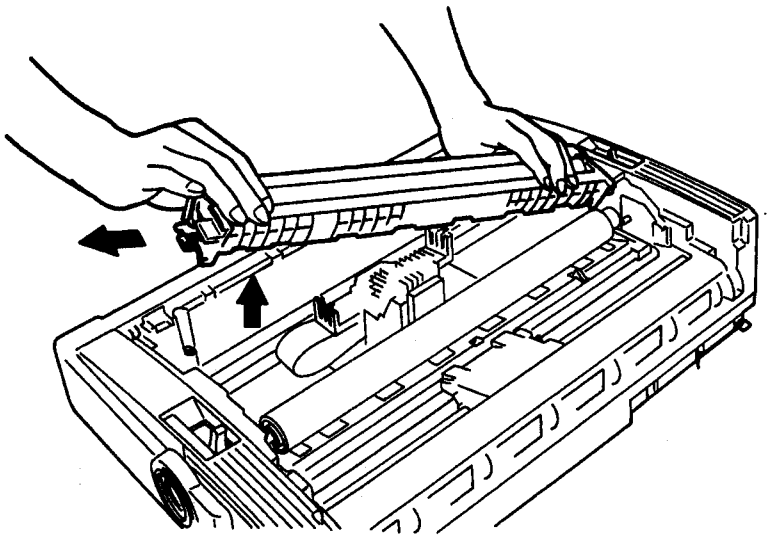


Figure 6-17 Bail Roller Unit Removal

BAIL ROLLER GUIDE ASSEMBLY REMOVAL

To remove the bail roller guide assembly, first remove the feed roller unit.

Then proceed as follows.

1. Open the bail roller guide backward.
2. Pull the both ends of the bail roller guide outward and remove it from the feed roller unit (see Figure 6-18).

CAUTION

Do not pull off the bail roller guide more than necessary. Excessive force may cause damage.

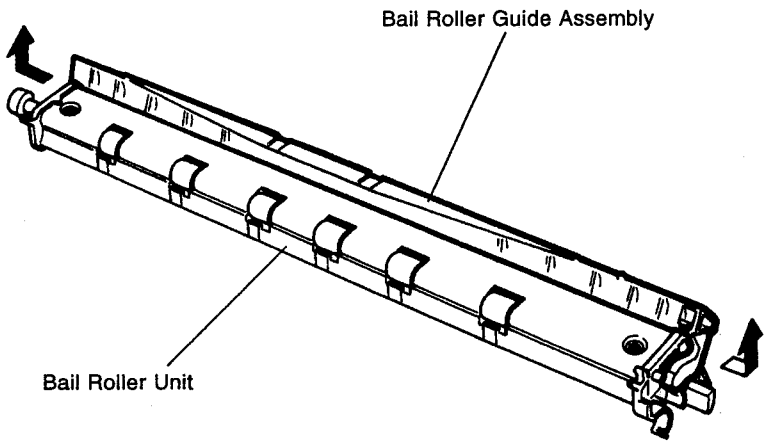


Figure 6-18 Bail Roller Guide Assembly

PAPER THICKNESS SETTING LEVER REMOVAL

To remove the paper thickness setting lever, first remove the middle cover assembly.

1. Remove the screw securing the paper thickness setting lever to the guide shaft and remove the lever (see Figure 6-19).

NOTE

When replacing the paper thickness setting lever, see Section 4 for the platen gap and card holder adjustment procedures.

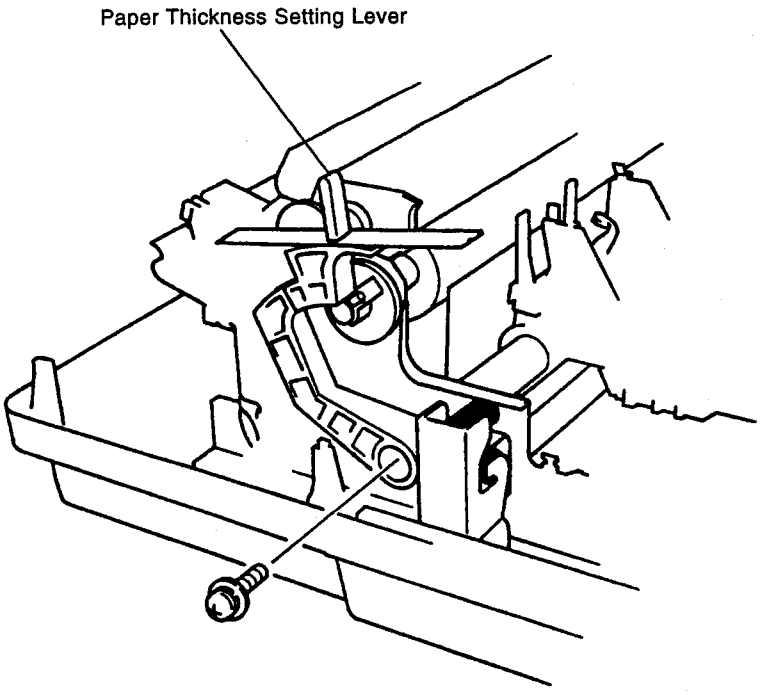


Figure 6-19 Paper Thickness Lever

TRACTOR UNIT REMOVAL

To remove the tractor unit, first remove the middle cover assembly. Then proceed as follows.

1. Remove the two screws securing the tractor frame to the left and right side frames (see Figure 6-20).
2. Turn the tractor unit forward and lift it out of the mechanism unit (see Figure 6-20).

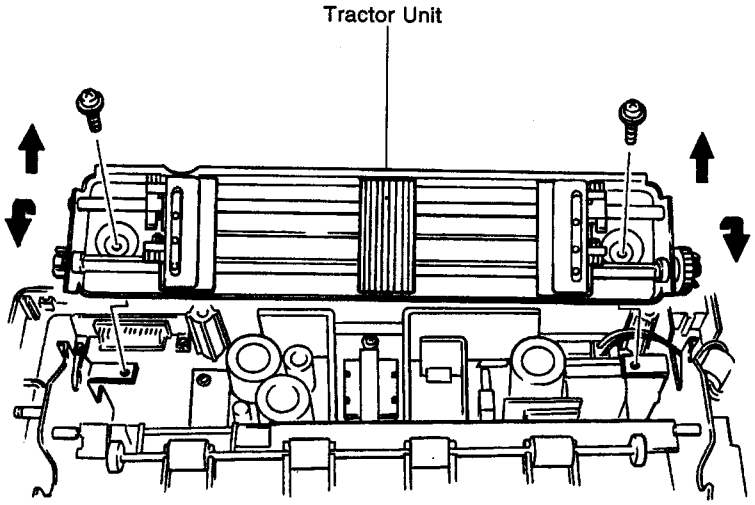


Figure 6-20 Tractor Unit Mounting Screws

TRACTOR ASSEMBLY REMOVAL

To remove the tractor assembly, first remove the middle cover assembly and tractor unit. Then proceed as follows.

1. Remove the tractor gear from the tractor drive shaft by unlocking the lock tab (see Figure 6-21).
2. Releasing the locking tab, turn the tractor bushing (RH) until the tabs on the bushing align with the slot on the tractor frame and remove it (see Figure 6-21).
3. Releasing the locking tab, turn the tractor bushing (LH) until the tabs on the bushing align with the slot on the tractor frame and remove it (see Figure 6-22).
4. Slide and remove the tractor drive shaft (see Figure 6-23).
5. Remove the special retainer and slide the tractor support shaft to the left side (see Figure 6-24).
6. Pull the right tractor assembly, center guide, and left tractor assembly from the tractor unit.

CAUTION

When replacing the tractor assembly, make sure the alignment marks on the tractors are in the same relative position (see Figure 6-25).

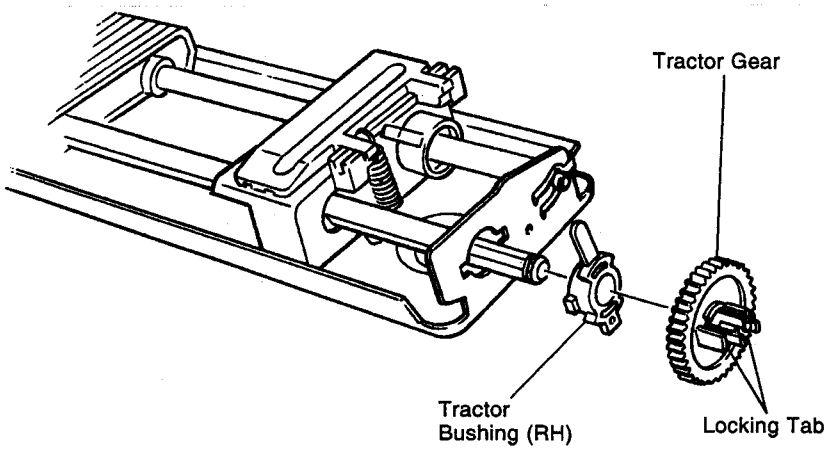


Figure 6-21 Tractor Gear and Tractor Bushing (RH)

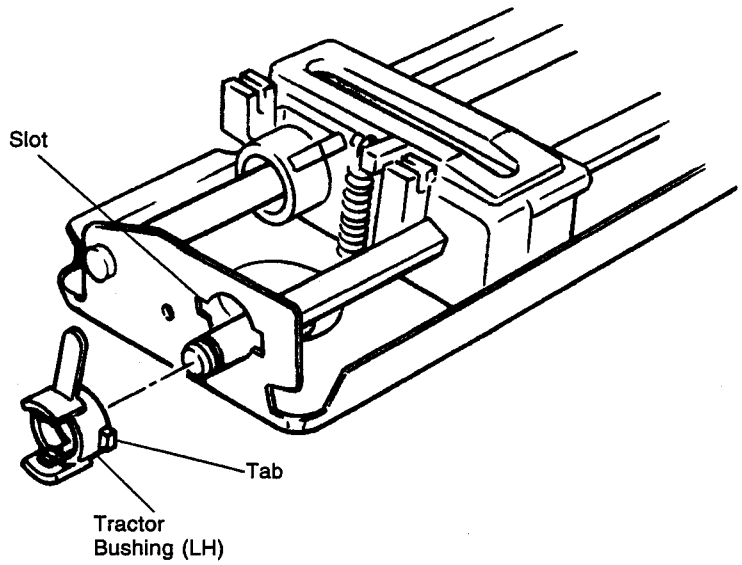


Figure 6-22 Tractor Bushing (LH)

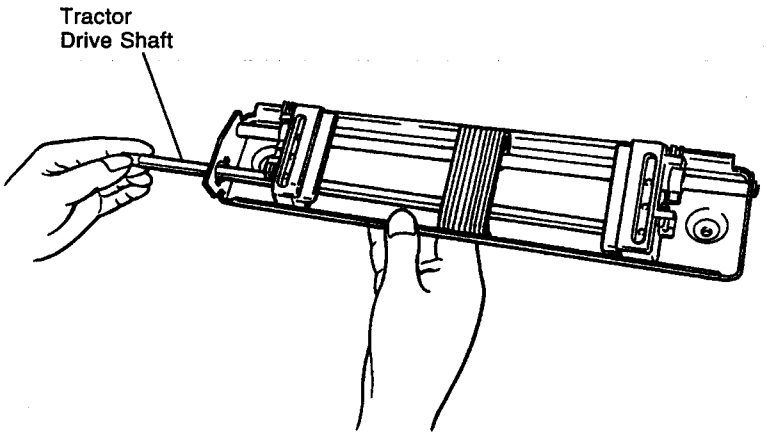


Figure 6-23 Tractor Drive Shaft

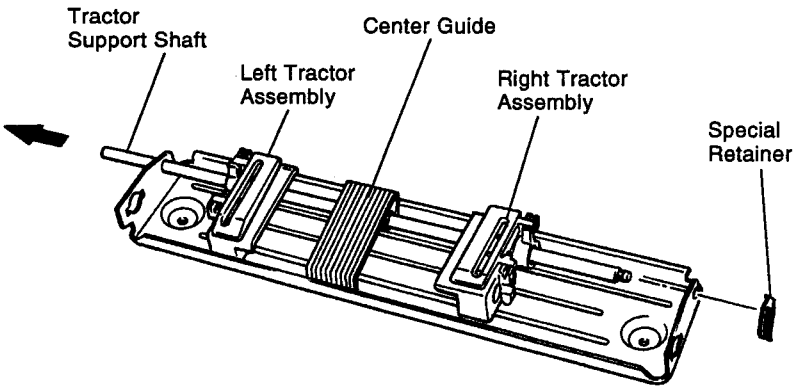


Figure 6-24 Tractor Support Shaft

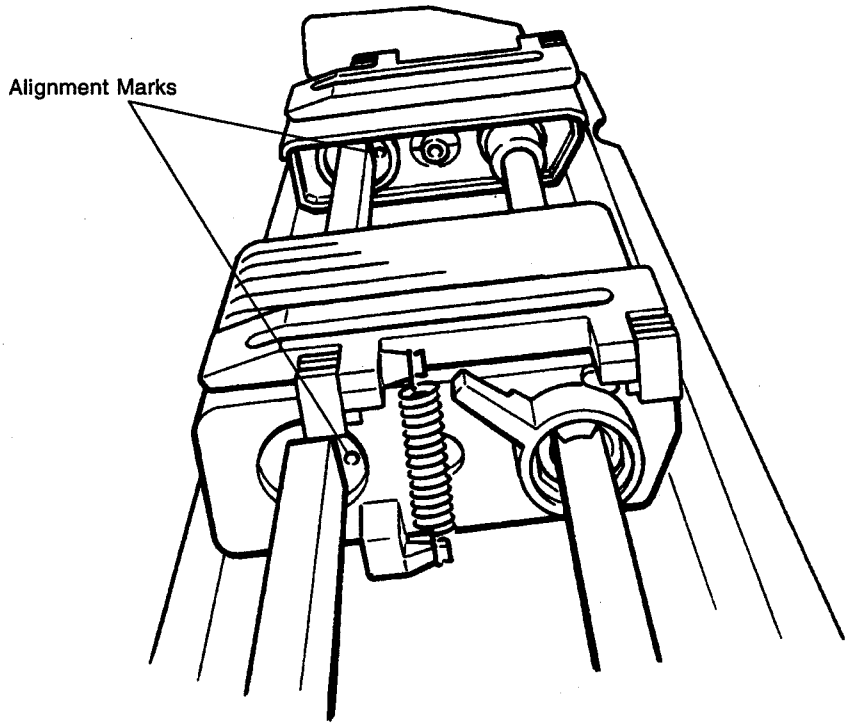


Figure 6-25 Alignment Marks

HP SENSOR ASSEMBLY REMOVAL

To remove the HP sensor assembly, first remove the middle cover assembly. Then proceed as follows.

1. Disconnect CN42 from the connection board (see Figure 6-26).
2. Unlock the locking tab of the HP sensor holder and lift up and slide to the left side frame to remove it (see Figure 6-27).

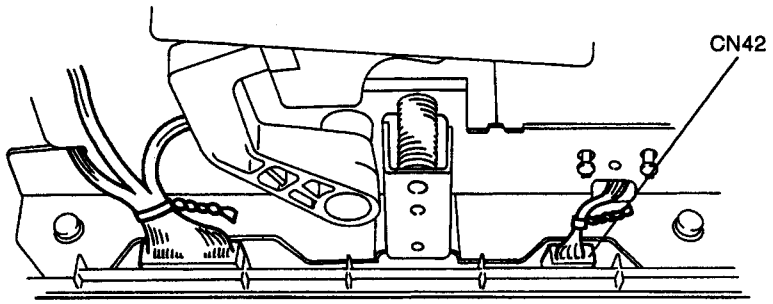


Figure 6-26 HP Sensor Connector

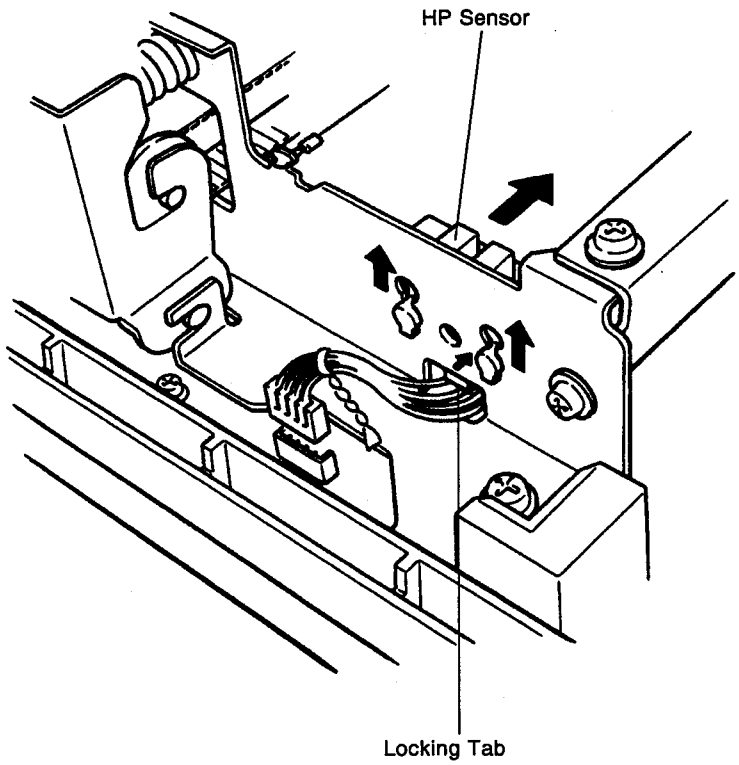


Figure 6-27 HP Sensor

SENSOR AND SWITCH ASSEMBLY REMOVAL

To remove the sensor and switch assembly, first remove the middle cover assembly. Then proceed as follows.

1. Disconnect CN44 from the connection board (see Figure 6-28).
2. Remove the PF sensor by removing the screw securing it to the left side frame (see Figure 6-29).

NOTE

When replacing the PF sensor, see Section 4 for the PF sensor adjustment procedures.

3. Remove the option sensor bracket by removing the screw securing it to the left side frame (see Figure 6-30).
4. Remove the MDL sensor bracket by removing the two screws securing it to the main stay (see Figure 6-31).

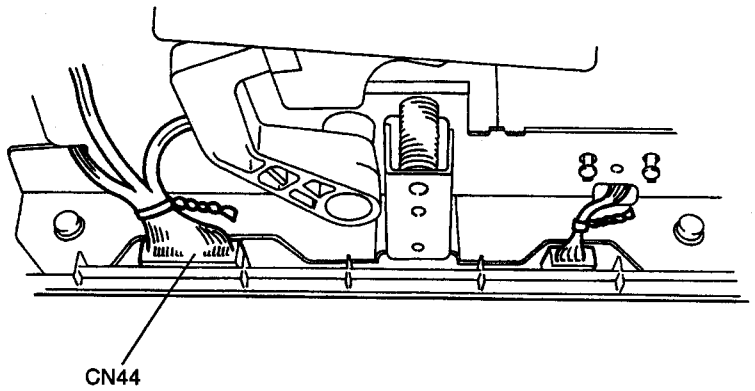


Figure 6-28 Connector CN44

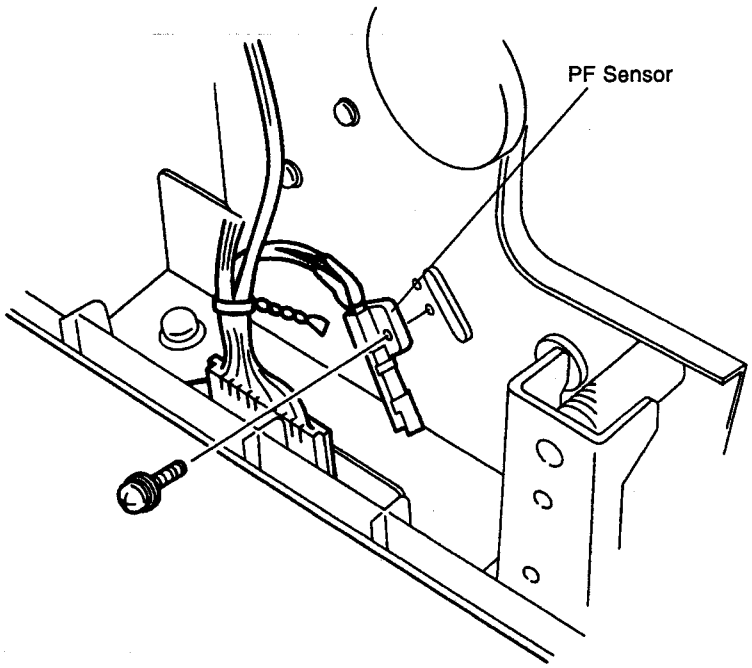


Figure 6-29 PF Sensor

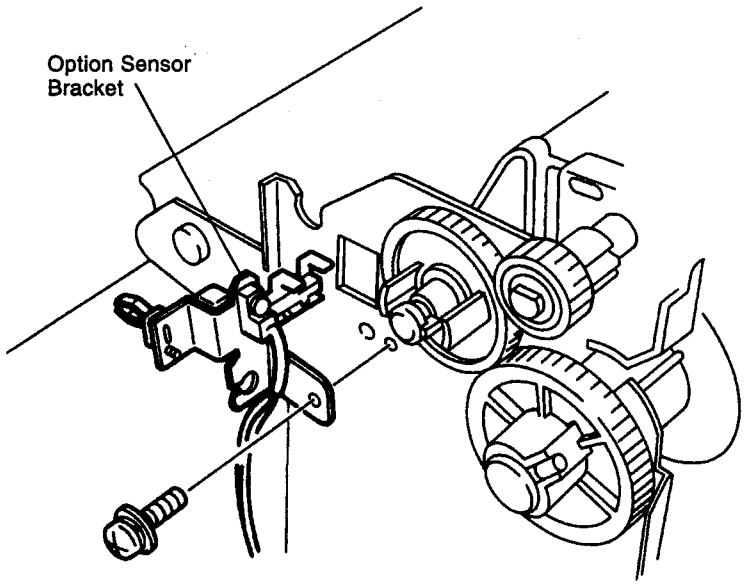


Figure 6-30 Option Sensor Bracket

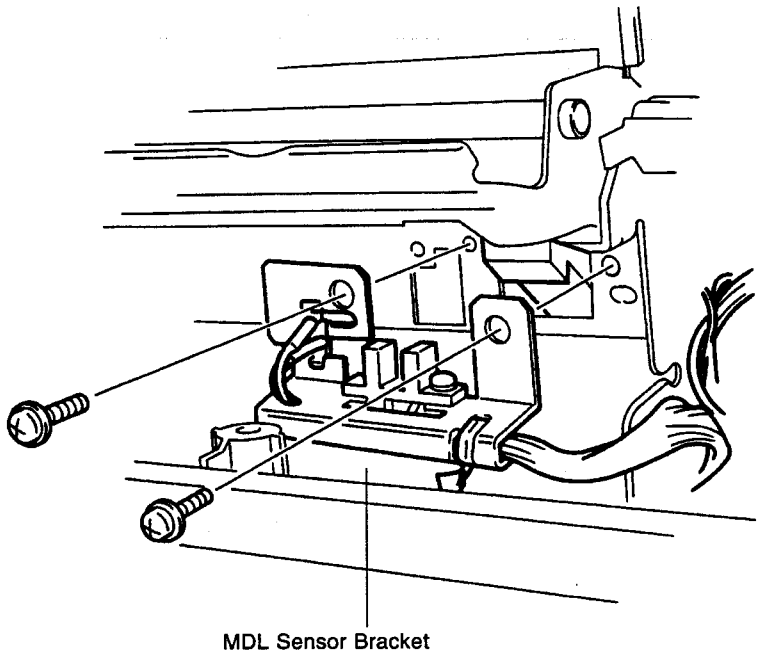


Figure 6-31 MDL Sensor Bracket

CARD HOLDER REMOVAL

To remove the card holder, first remove the print head. Then proceed as follows.

1. Slide the sensor lock spring to the left, and remove the paper detection sensor (see Figure 6-32).
2. Pull the plastic tabs at the bottom of the card holder together, and remove the card holder (see Figure 6-33).

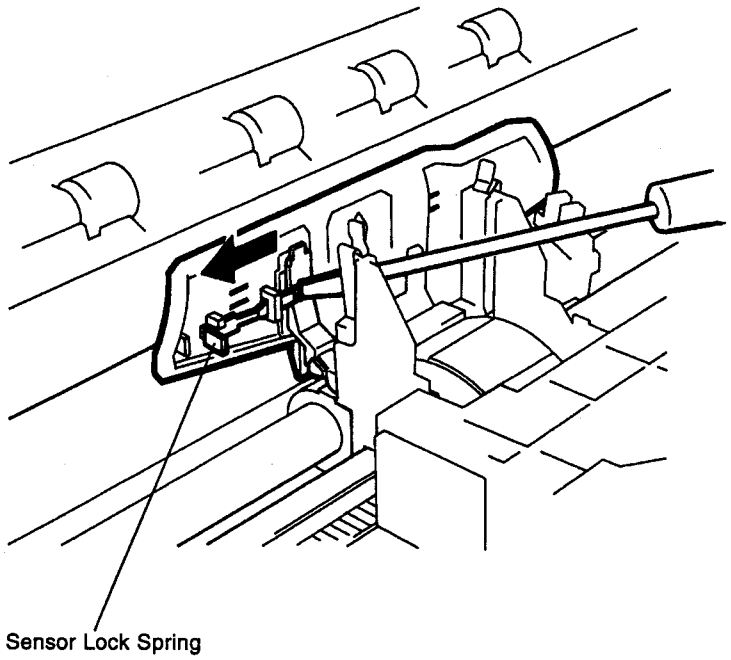


Figure 6-32 Paper Detection Sensor Removal

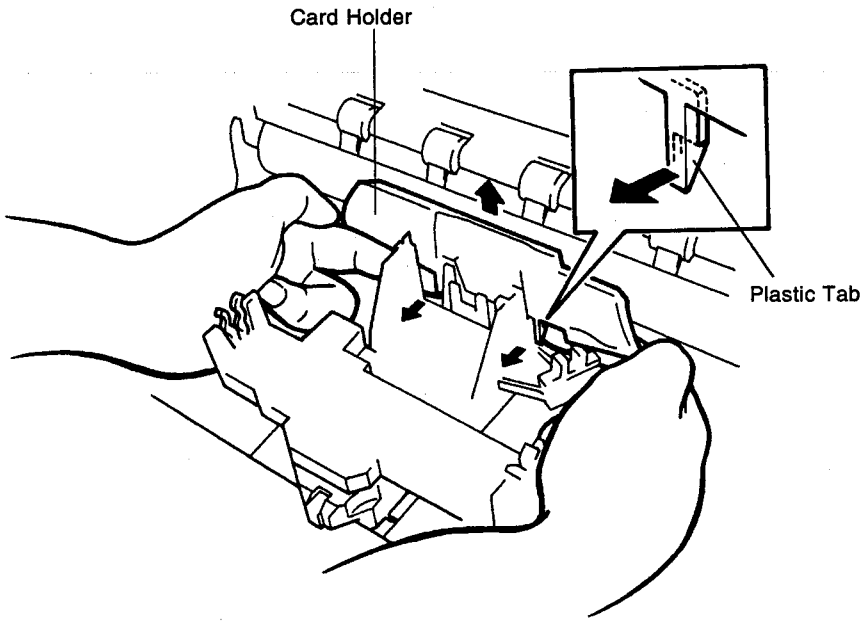


Figure 6-33 Card Holder Removal

RIBBON BASE REMOVAL

To remove the ribbon base, first remove the print head. Then proceed as follows.

1. Unlock the ribbon base by turning the fastener counterclockwise with coin (see Figure 6-34).
2. Remove the base by lifting it up.

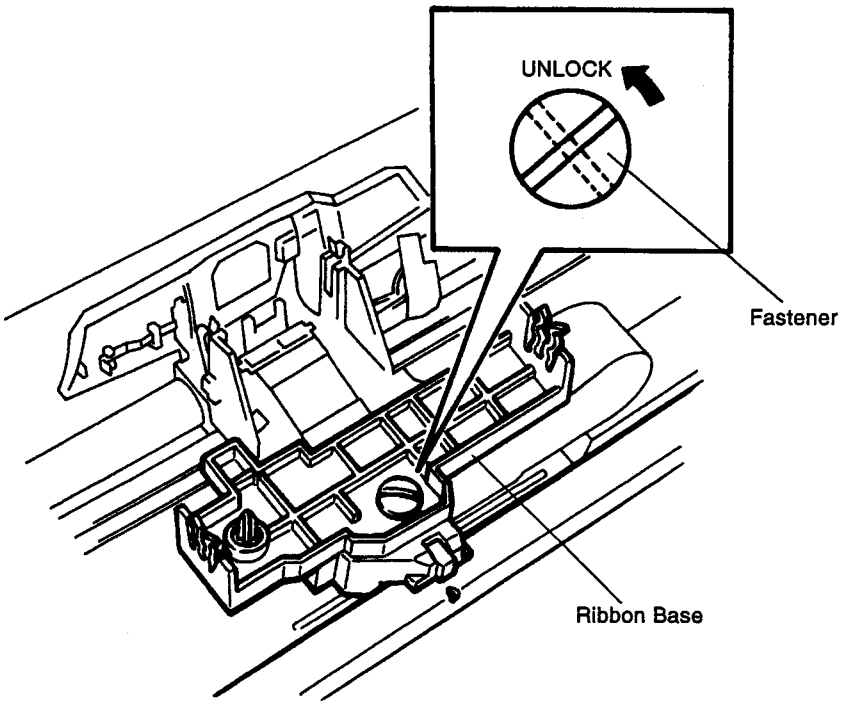


Figure 6-34 Ribbon Base Removal

CARRIER CABLE ASSEMBLY REMOVAL

To remove the carrier cable assembly which consists of two carrier cables and one color cable,

- print head and
- ribbon base.

Then proceed as follows.

1. Move the carrier to the right side of the printer.
2. Remove the cable holder by removing the screw (see Figure 6-35).
3. Move the carrier to the left side of the printer.
4. Remove the screw securing the carrier cable cover to the shield cover and lift out of the printer (see Figure 6-36).
5. Pull up both ends of the connector locks of CN4 through CN6 (see Figure 6-37).
6. Remove the cables from the unlocked connectors.
7. Release the cable from the three cable clamps on the carrier (see Figure 6-38).
8. With a screwdriver blade, press the two locking tabs out as far as possible to release the connector from the carrier and lift the connector out of the printer (see Figure 6-39).

CAUTION

Do not press the tab more than necessary. Excessive force may cause damage.

9. Pull up both ends of the color cable connector lock and remove the color cable from the unlocked connector. (see Figure 6-40).

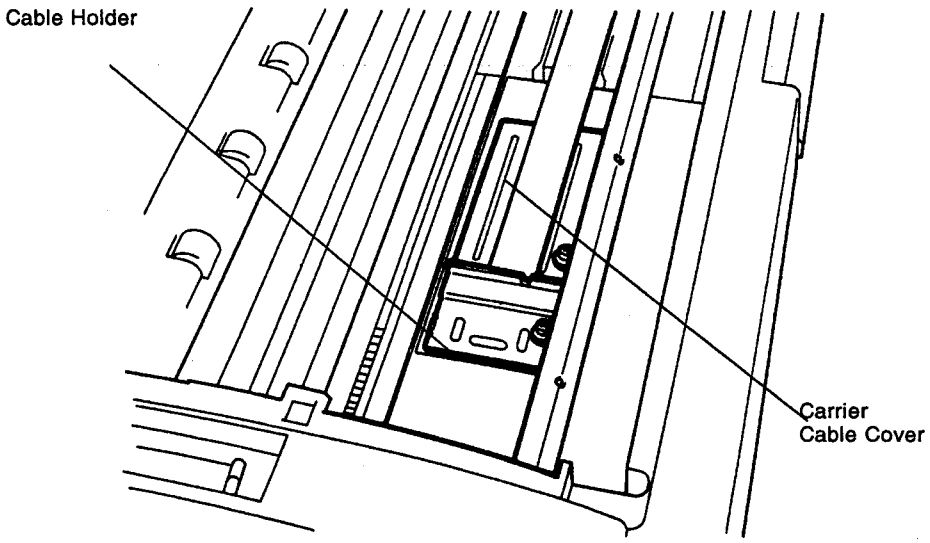


Figure 6-35 Cable Holder

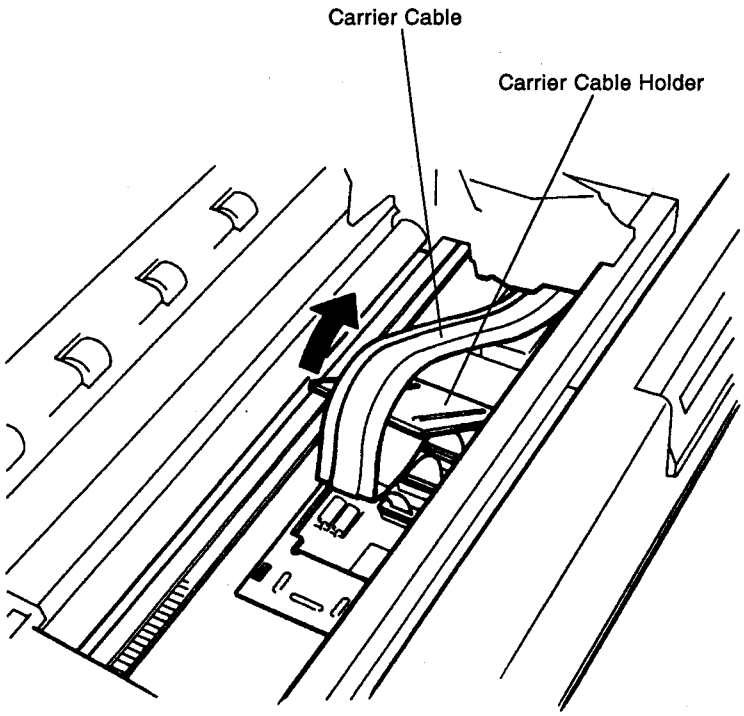


Figure 6-36 Carrier Cable Cover

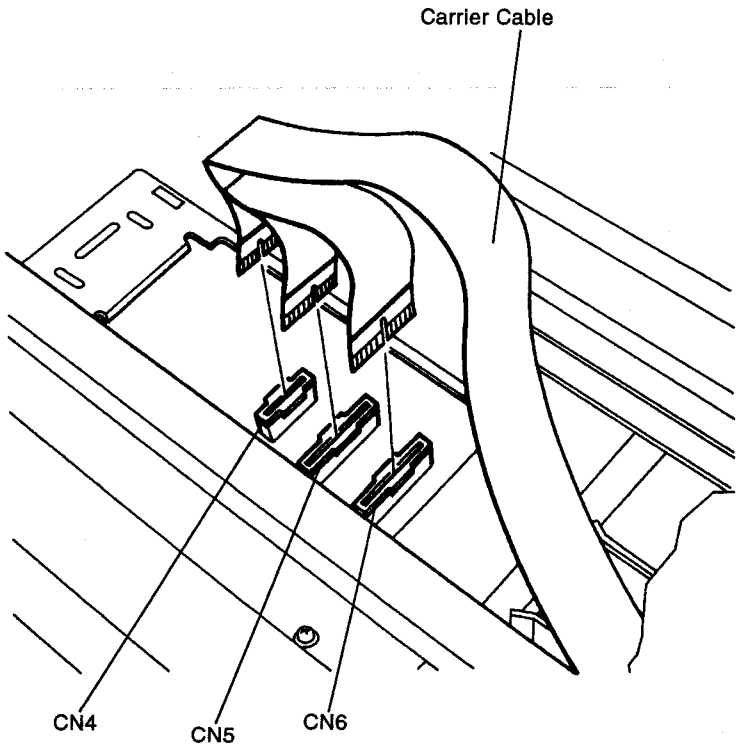


Figure 6-37 Carrier Cable Connector

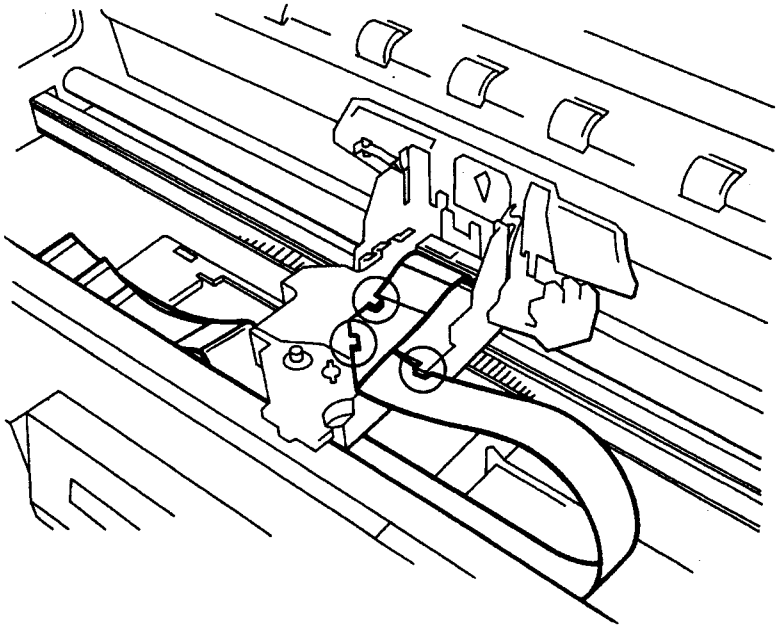


Figure 6-38 Cable Clamps

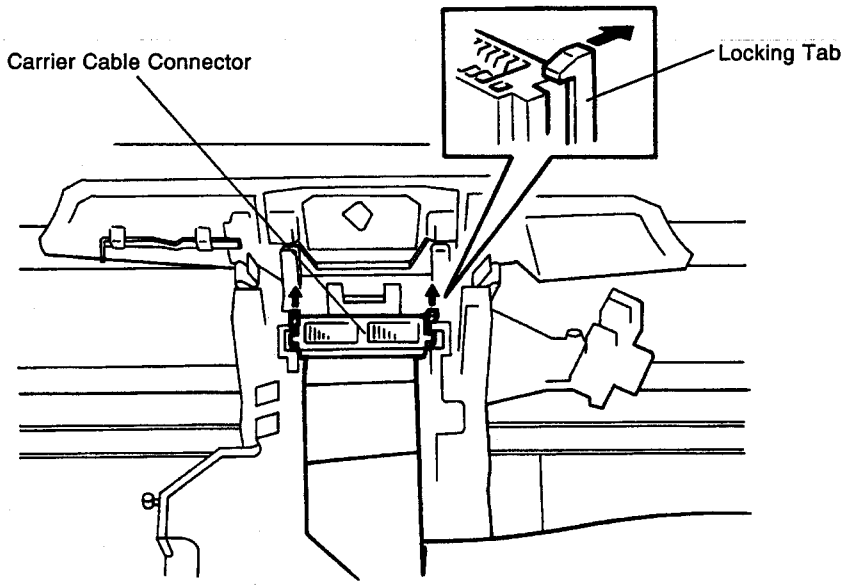


Figure 6-39 Carrier Cable Connector

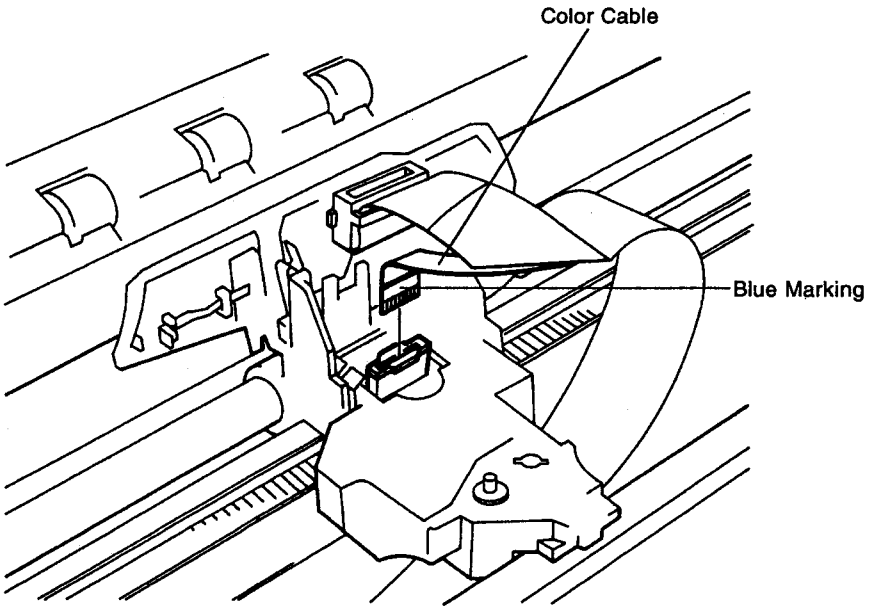


Figure 6-40 Color Cable Removal

COLOR CABLE REMOVAL

To remove the color cable, first remove the

- print head,
- ribbon base, and
- carrier cable assembly.

Then proceed as follows.

1. Pull up both ends of the color cable connector lock (see Figure 6-41).
2. Remove the color cable from the unlocked connector (see Figure 6-41).

NOTE

When replacing the color cable, insert the cable to connector marking faces front of the printer.

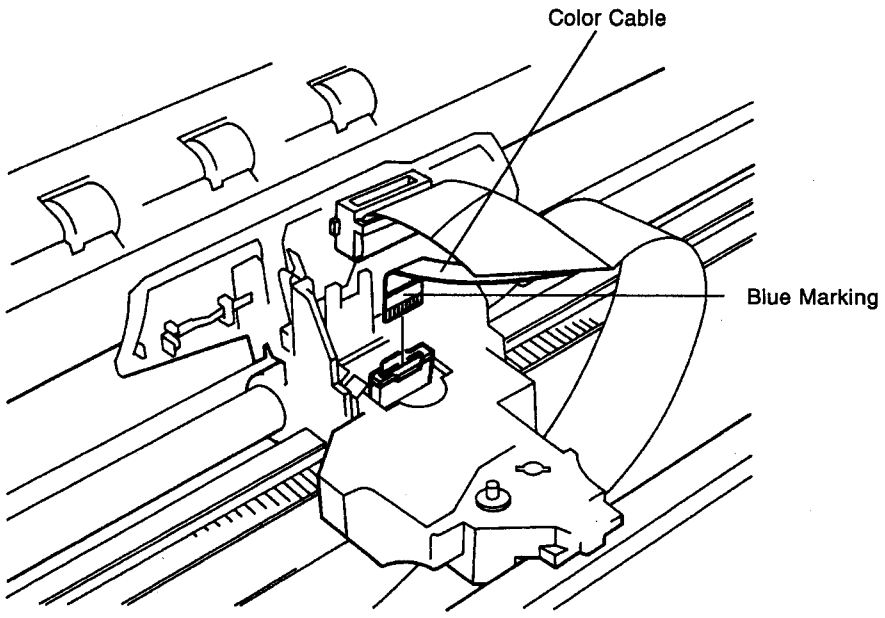


Figure 6-41 Color Cable Removal

PLATEN ASSEMBLY REMOVAL

To remove the platen assembly, first remove the

- middle cover assembly,
- print head,
- card holder, and
- feed roller unit.

Then proceed as follows.

1. Unlock two locking tabs of the option gear to remove the option gear (see Figure 6-42).
2. Shift the release lever forward (friction mode).
3. Unlock the locking tabs by turning the left and right platen bushing forward and remove the platen assembly (see Figure 6-43 and Figure 6-44).

After replacing the platen assembly, you will need to adjust the platen gap and card holder (see Section 4). Then perform a printer self-test to check for smudging and poor line registration. If necessary, perform the adjustment again.

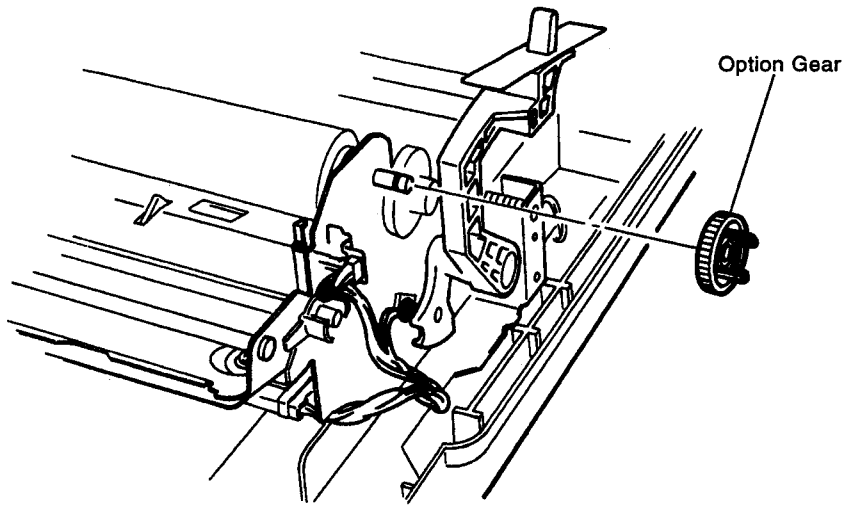


Figure 6-42 Option Gear

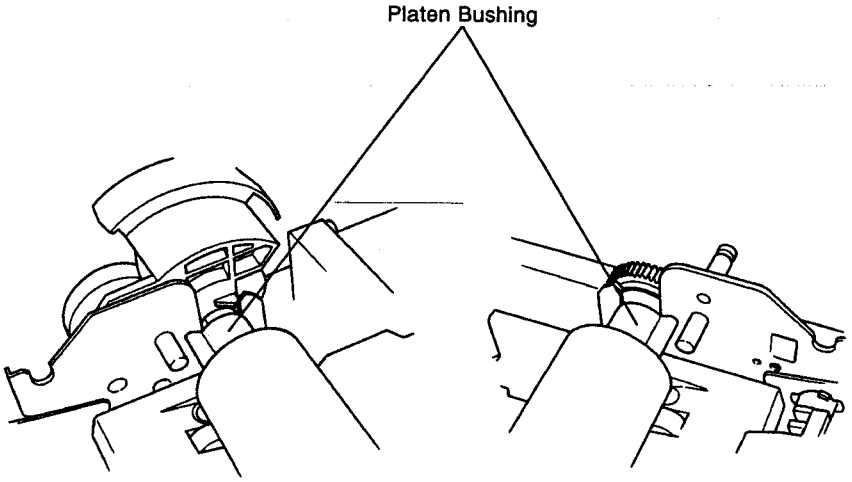


Figure 6-43 Platen Bushing

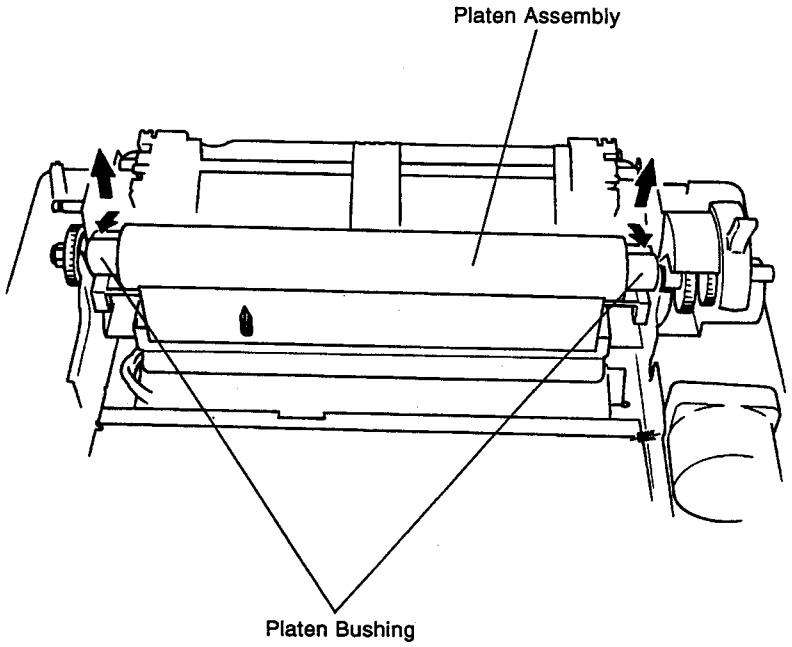


Figure 6-44 Platen Assembly

PAPER RELEASE ARM REMOVAL

To remove the paper release arm, first remove the

- middle cover,
- print head,
- card holder,
- feed roller unit,
- platen assembly, and
- tractor unit.

Then proceed as follows.

1. Remove the LF motor unit by removing the three screws securing it to the right side frame (see Figure 6-45).
2. Turn the paper release arm until the tab on the paper release arm aligns with the slot on the right side frame (see Figure 6-46).
3. Pull off the paper release arm.

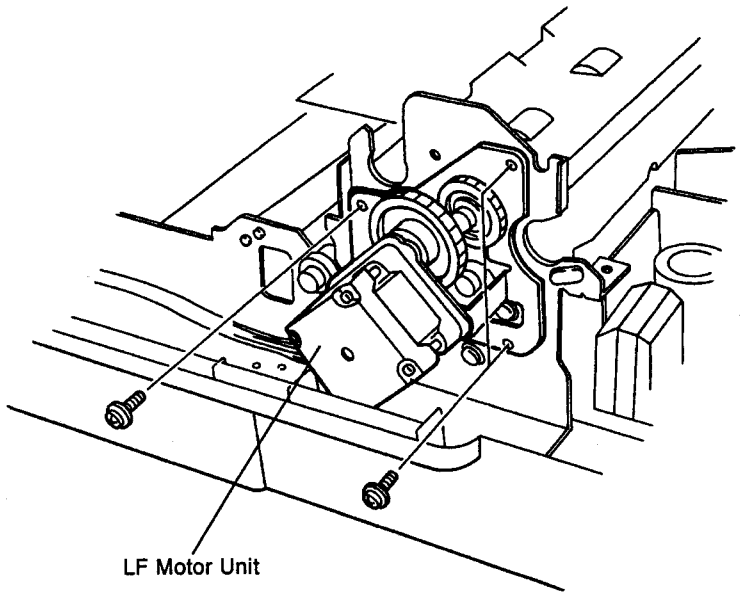


Figure 6-45 LF Motor Unit

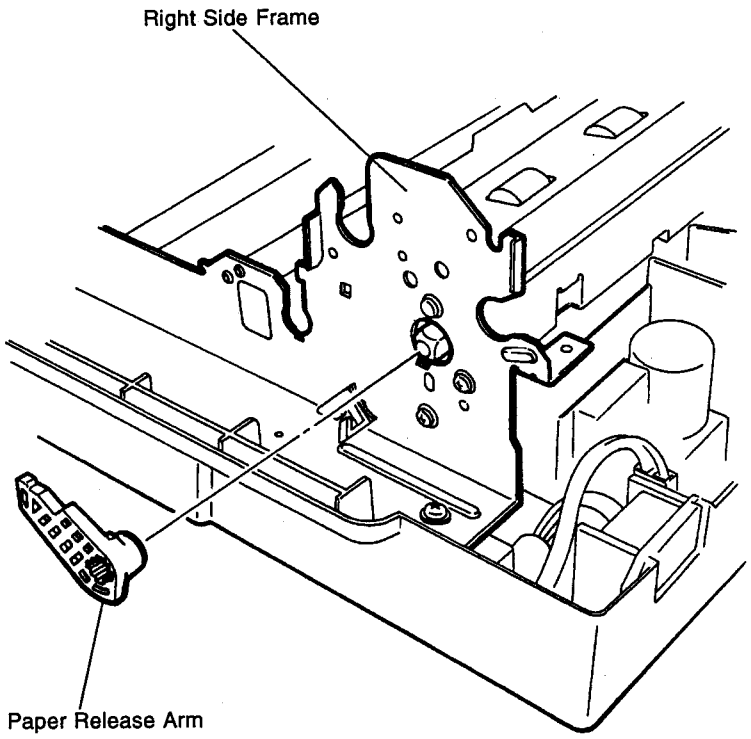


Figure 6-46 Paper Release Arm

SP MOTOR ASSEMBLY REMOVAL

To remove the SP motor assembly, first remove the middle cover assembly. Then proceed as follows.

1. Disconnect CN8 from the mother board (see Figure 6-47).
2. Remove the vinyl twist-tie securing the motor cable to the right side frame (see Figure 6-47).
3. Remove the two screws securing the SP motor unit to the right side frame (see Figure 6-48).
4. Press and hold the tension arm to the left side frame, release the SP motor pulley from the timing belt by turning the SP motor unit counterclockwise (see Figure 6-49).
5. Remove the SP motor unit out of the printer.
6. Remove the four screws securing the SP motor assembly to the SP motor bracket (see Figure 6-50).

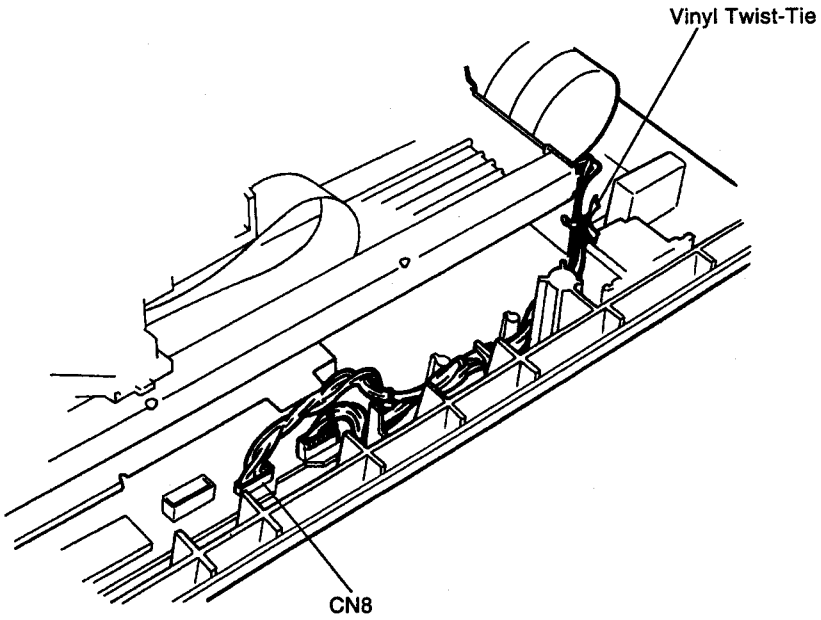


Figure 6-47 SP Motor Cable

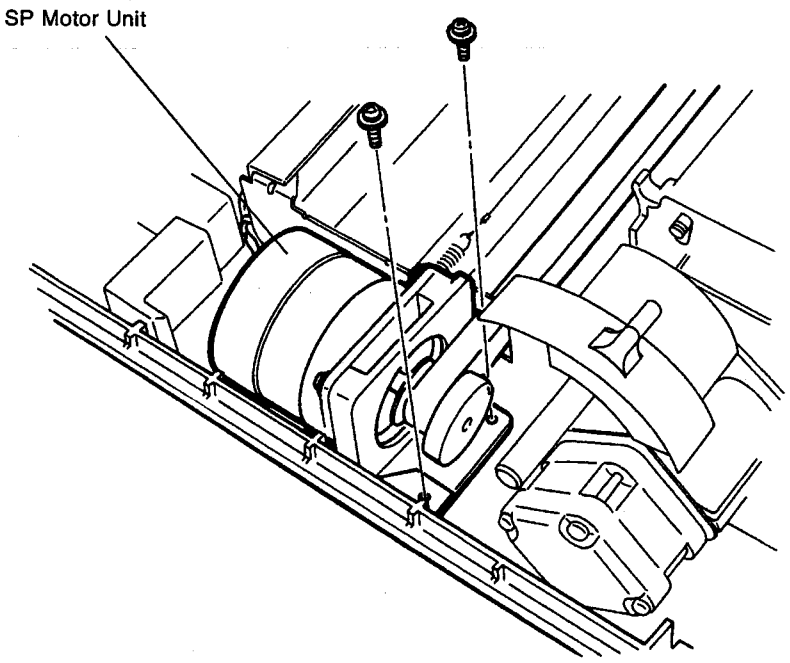


Figure 6-48 SP Motor Unit Screws

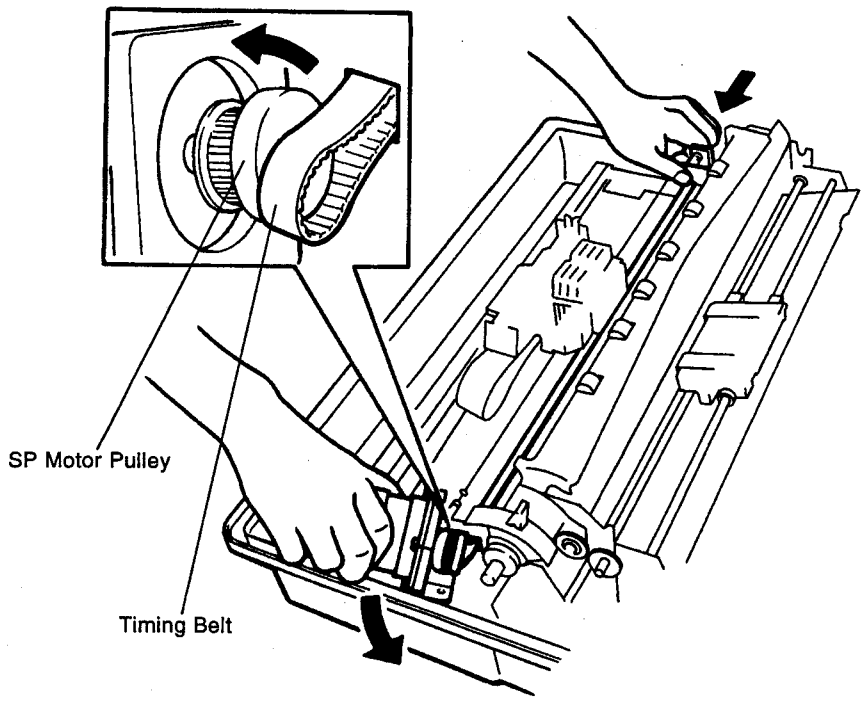


Figure 6-49 SP Motor Unit Removal

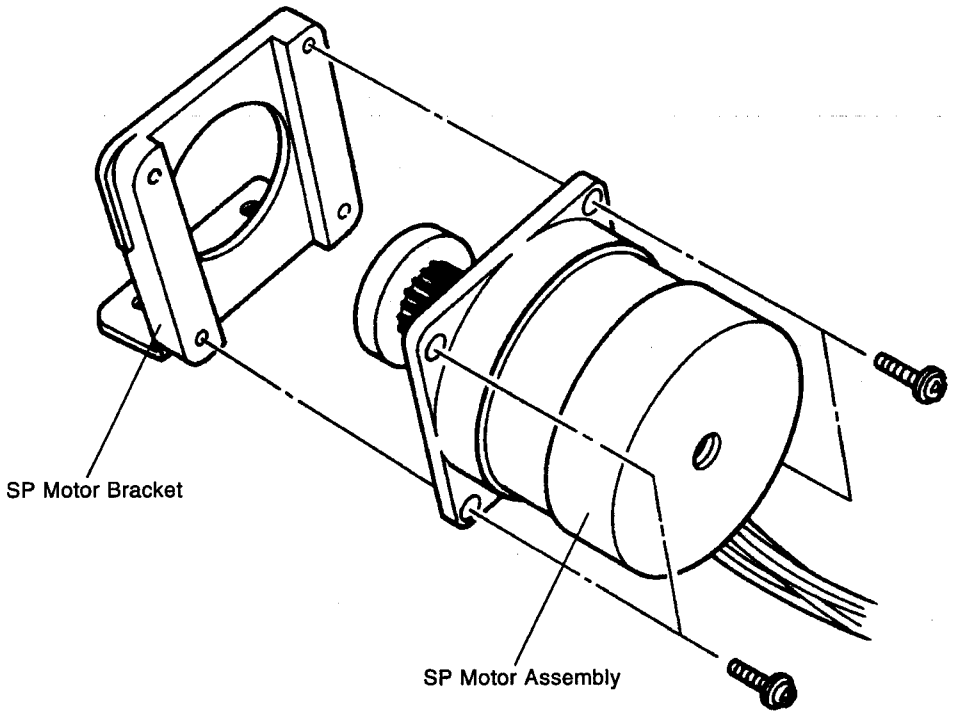


Figure 6-50 SP Motor Assembly

DRIVEN PULLEY ASSEMBLY REMOVAL

To remove the driven pulley assembly, first remove the

- middle cover and
- SP motor assembly.

Then proceed as follows.

1. Remove the tension spring from the tension arm (see Figure 6-51).
2. Remove the driven pulley assembly from the timing belt (see Figure 6-51).

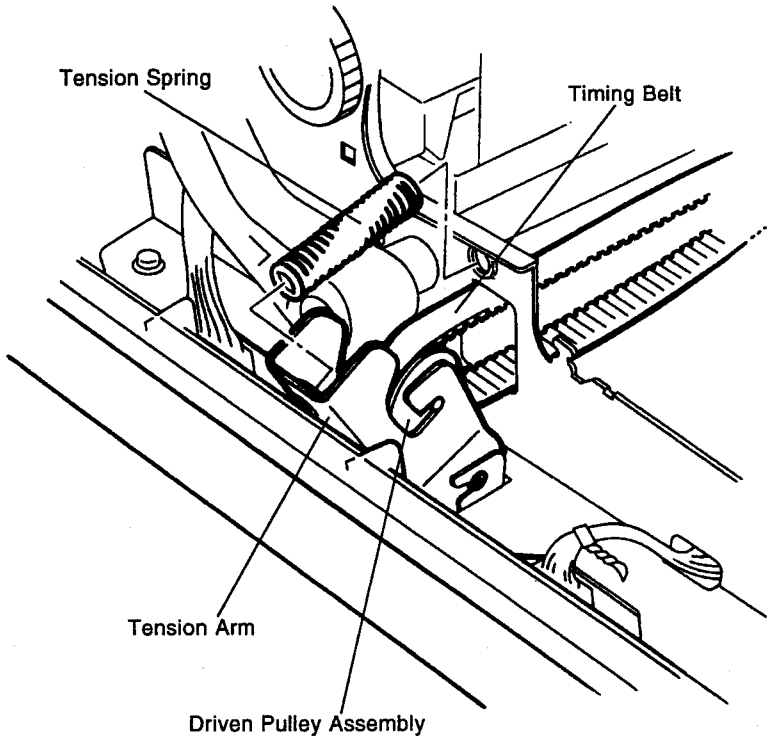


Figure 6-51 Driven Pulley Assembly

TIMING BELT REMOVAL

To remove the timing belt, first remove the

- middle cover assembly,
- print head,
- ribbon base,
- SP motor unit, and
- driven pulley assembly

Then proceed as follows.

1. Release the carrier cable from the three cable clamps on the carrier (see Figure 6-52).
2. With a screwdriver blade, press the two locking tabs out as far as possible to release the connector from the carrier and lift the connector out of the printer (see Figure6-53).

NOTE

Do not press the tab more than necessary. Excessive force may damage.

3. Pull up both ends of the color cable connector lock and remove the color cable from the unlocked connector (see Figure 6-54).
4. Remove the carrier frame cover (see Figure 6-55).
5. With a screwdriver blade, unlock the two locking tabs and lift the connector board out of the carrier (see Figure 6-56).
6. With a screwdriver blade, unlock the locking tab and lift the belt holder out of the carrier (see Figure 6-57).
7. Release the timing belt from the carrier by pulling the belt forward (see Figure 6-58).
8. Remove the timing belt out of the printer.

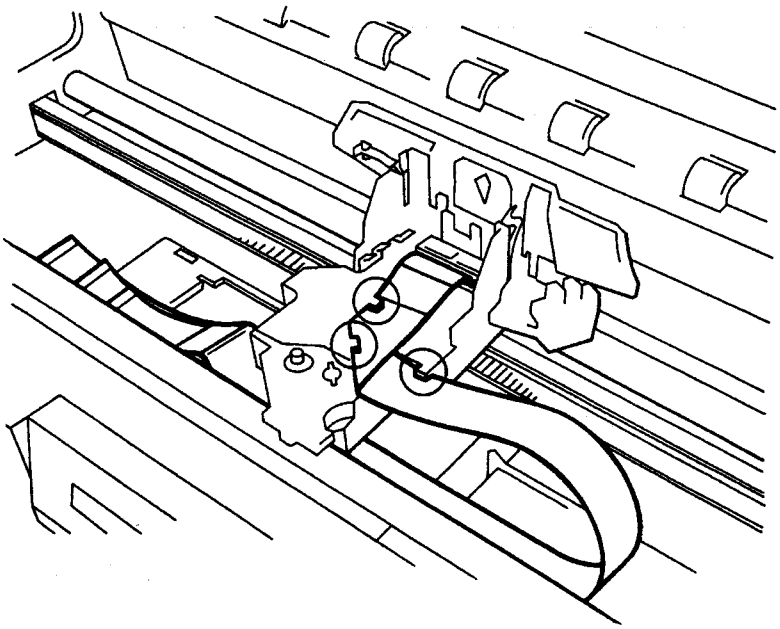


Figure 6-52 Cable Clamps

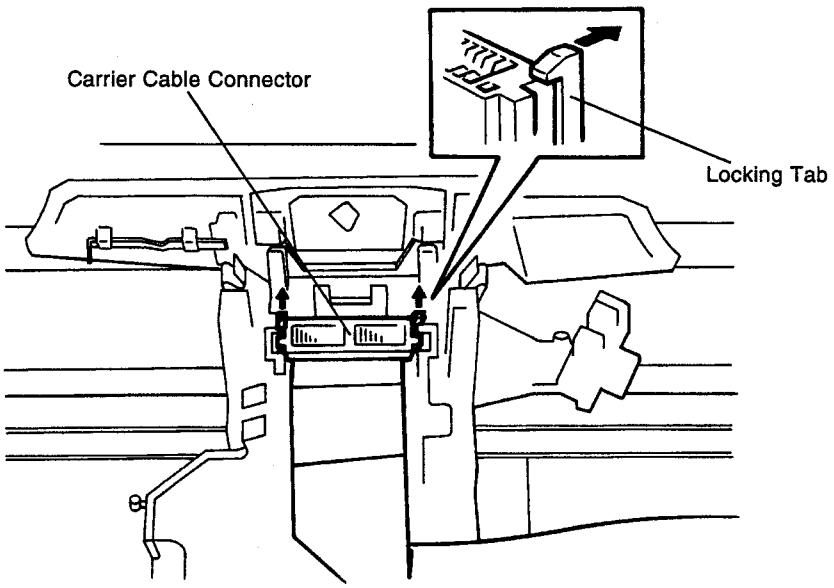


Figure 6-53 Carrier Cable Connector

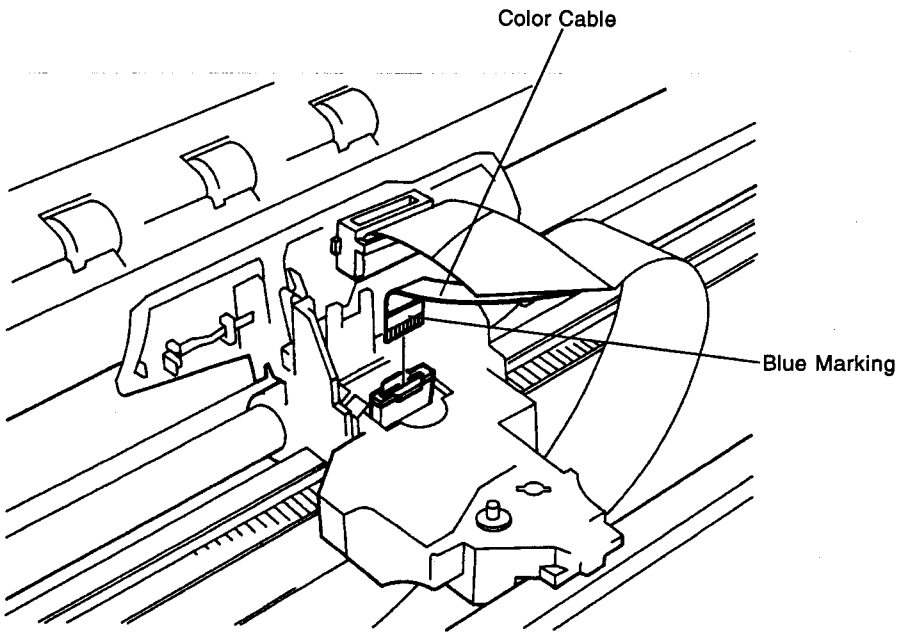


Figure 6-54 Color Cable Removal

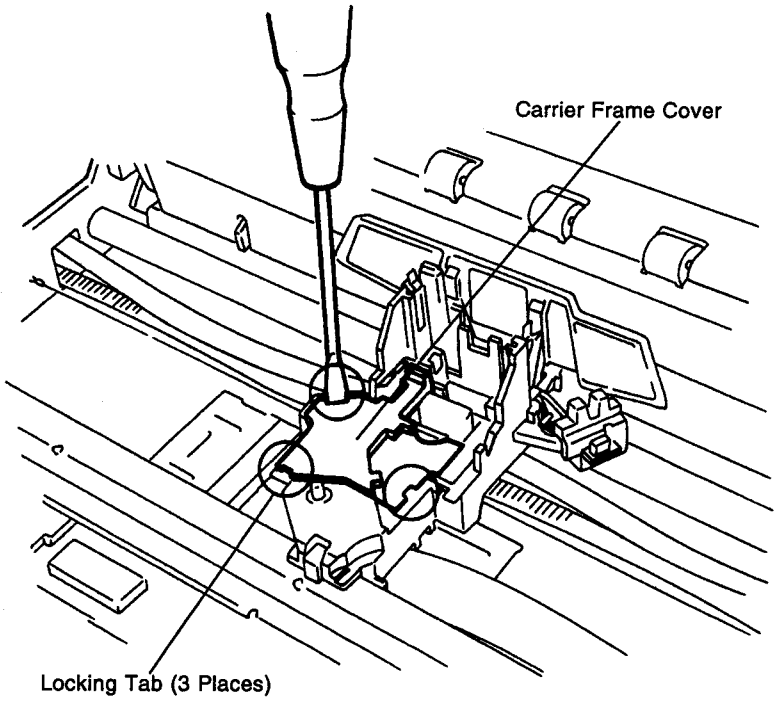


Figure 6-55 Carrier Frame Cover

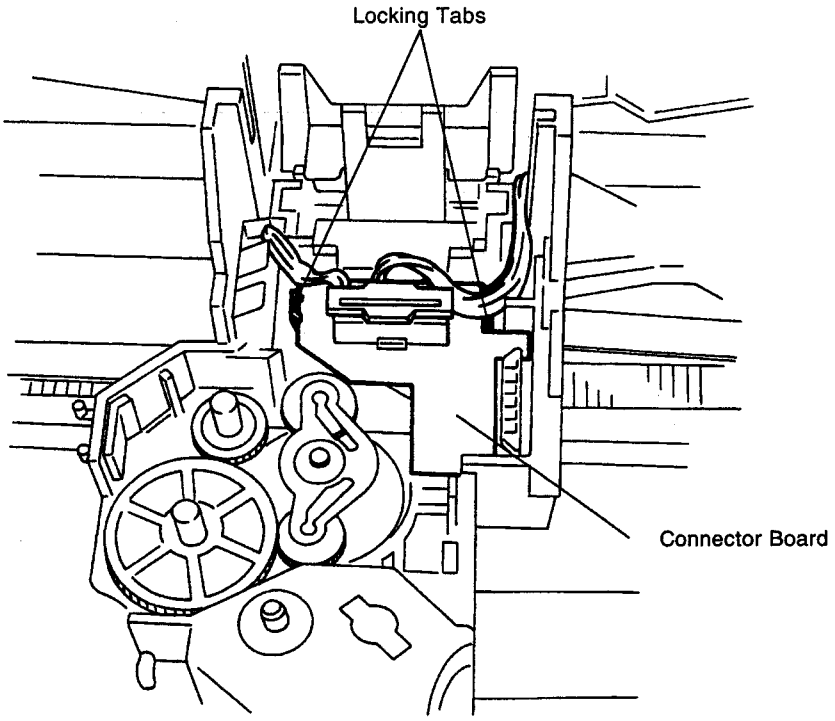


Figure 6-56 Connector Board

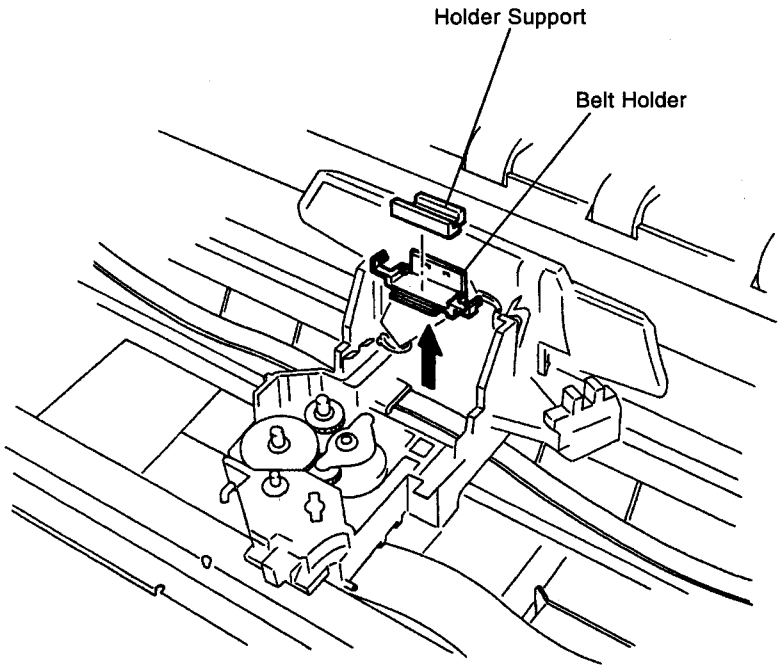


Figure 6-57 Belt Holder

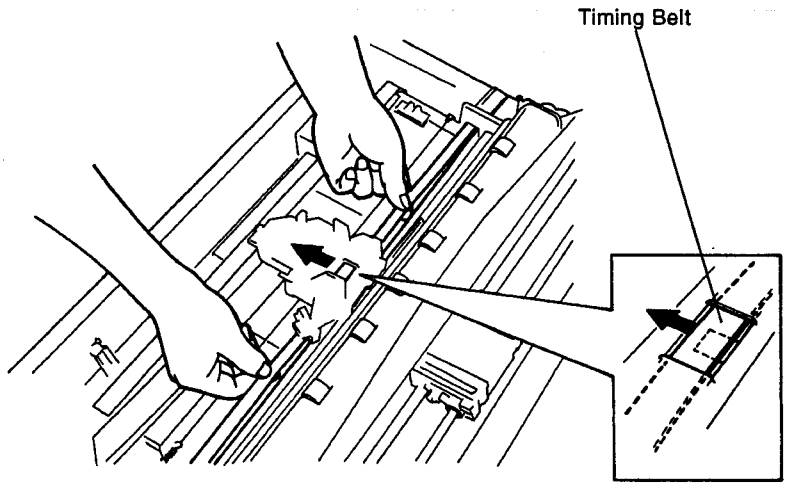


Figure 6-58 Timing Belt Removal

LF MOTOR ASSEMBLY REMOVAL

To remove the LF motor assembly, first remove the

- middle cover,
- print head,
- card holder,
- feed roller unit,
- SP motor unit,
- platen assembly, and
- tractor unit.

Then proceed as follows.

1. Disconnect CN9 from the mother board (see Figure 6-59).
2. Remove the vinyl twist-tie securing the motor cable to the right side frame (see Figure 6-59).
3. Remove the LF motor unit by removing the three mounting screws (see Figure 6-60).
4. Remove LF motor cables from cable clamp (see Figure 6-61).
5. Remove the three screws securing the LF motor assembly to the LF motor bracket (see Figure 6-62).

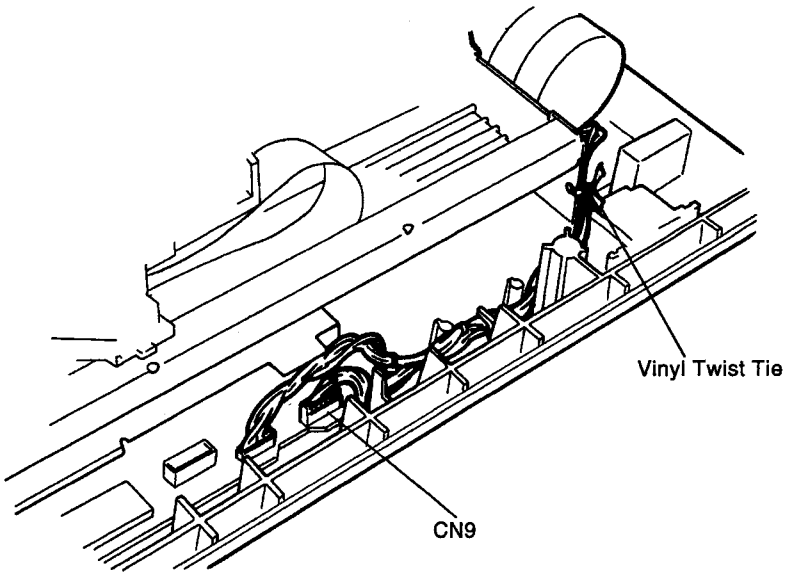


Figure 6-59 Connector CN19

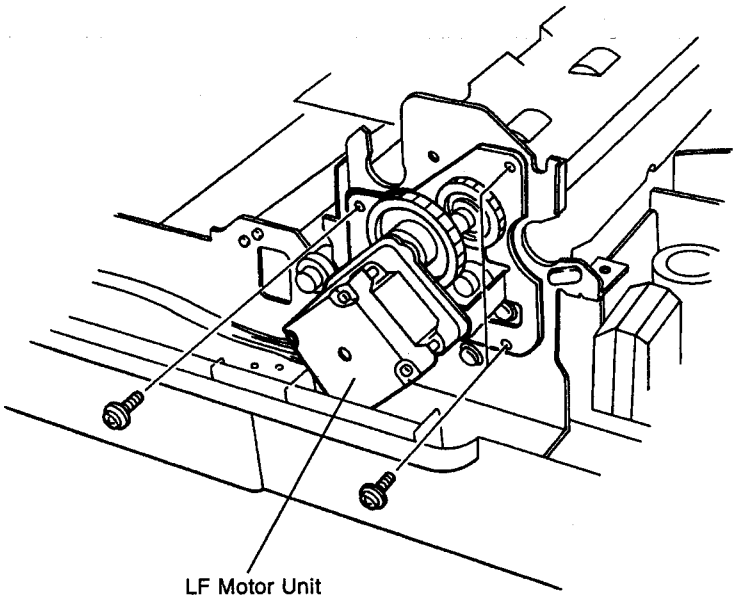


Figure 6-60 LF Motor Unit

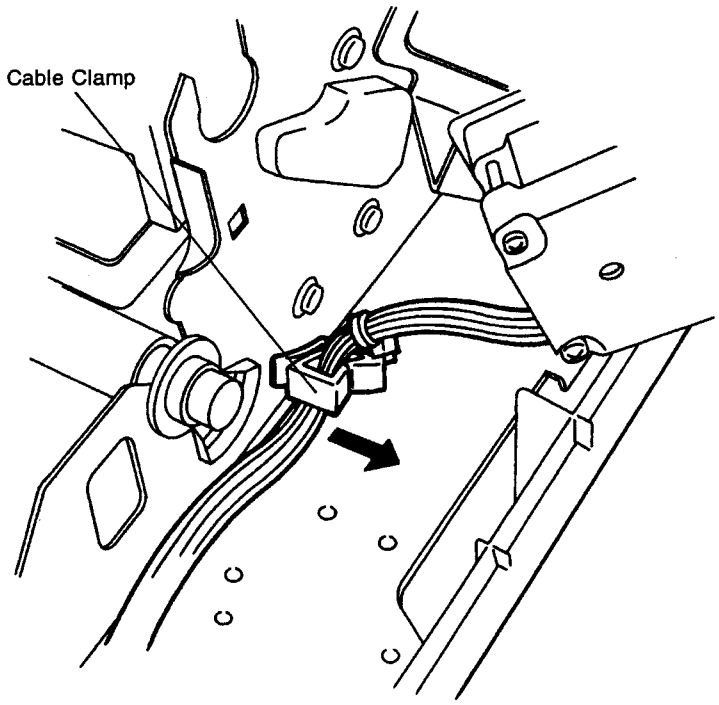


Figure 61 Cable Clamp

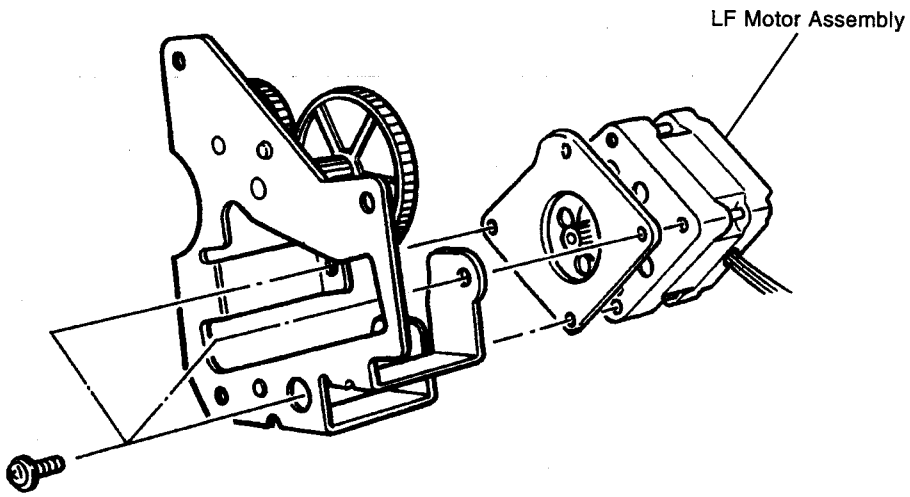


Figure 6-62 LF Motor Assembly

MECHANISM UNIT REMOVAL

To remove the mechanism unit, first remove the middle cover assembly. Then proceed as follows.

1. Move the carrier to the right side of the printer.
2. Remove the cable holder by removing the screw (see Figure 6-63).
3. Move the carrier to the left side of the printer.
4. Remove the screw securing the carrier cable cover to the shield cover and lift it out of the printer (see figure 6-64).
5. Pull up both ends of the connector locks CN4 through CN6 (see Figure 6-65).
6. Remove the cables from the unlocked connectors.
7. Disconnect CN8 and CN9 from the mother board (see Figure 6-66).
8. Disconnect CN42 and CN44 from the connection board (see Figure 6-67).
9. Remove the four screws securing the mechanism assembly (see Figure 6-68).
10. Hold the mechanism assembly by the front and rear frames, lift the assembly out of the printer (see Figure 6-69).

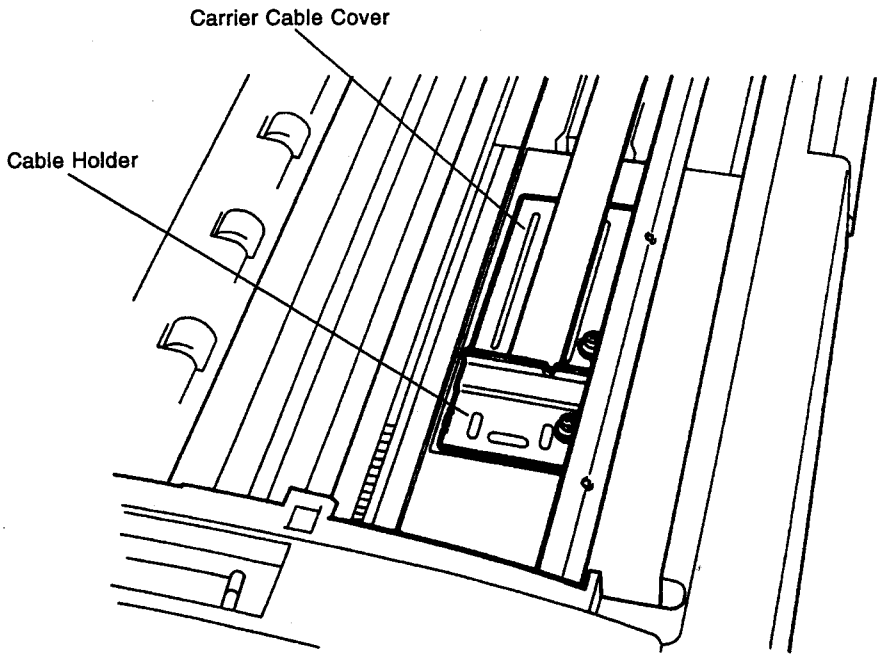


Figure 6-63 Cable Holder

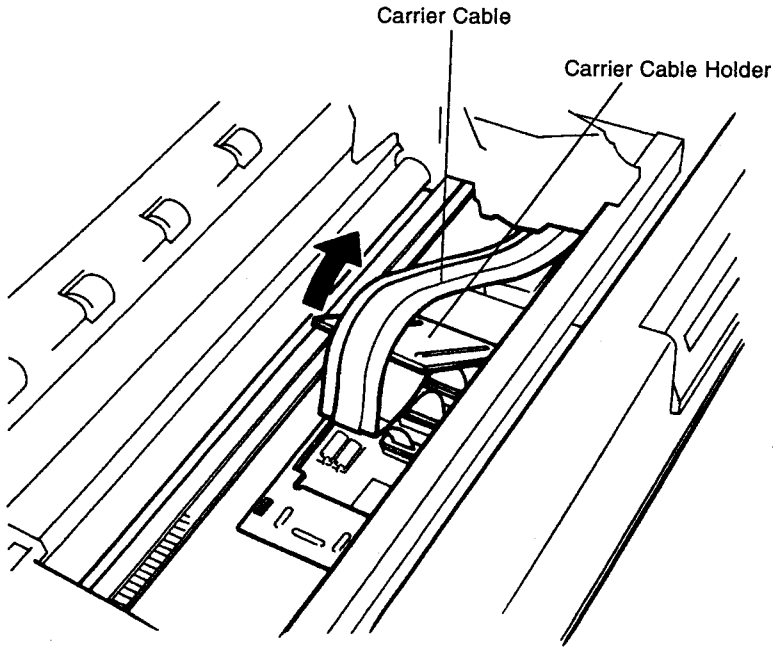


Figure 6-64 Carrier Cable Cover

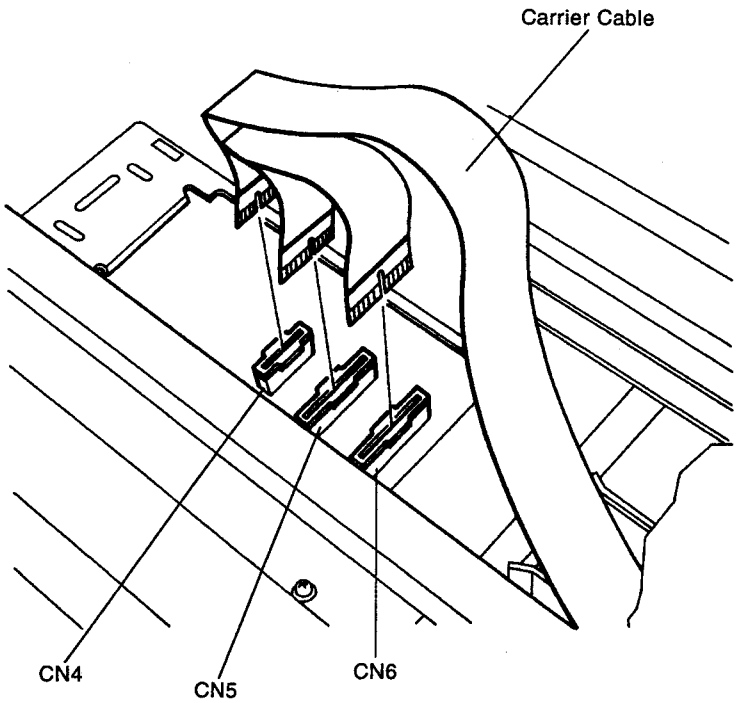


Figure 6-65 Carrier Cable Connectors

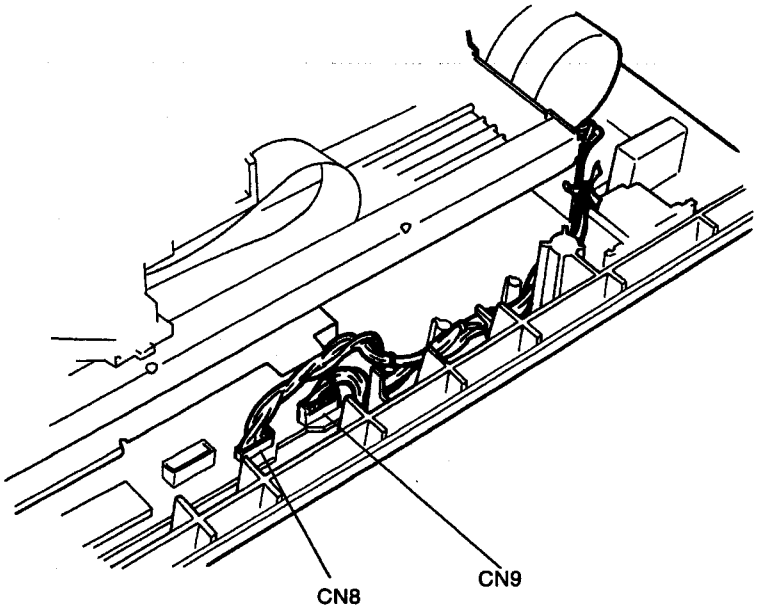


Figure 6-66 Motor Connectors

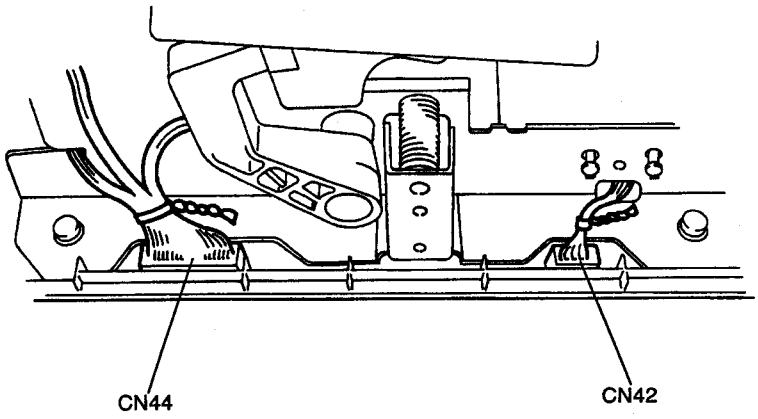


Figure 6-67 Connectors CN42 and CN44

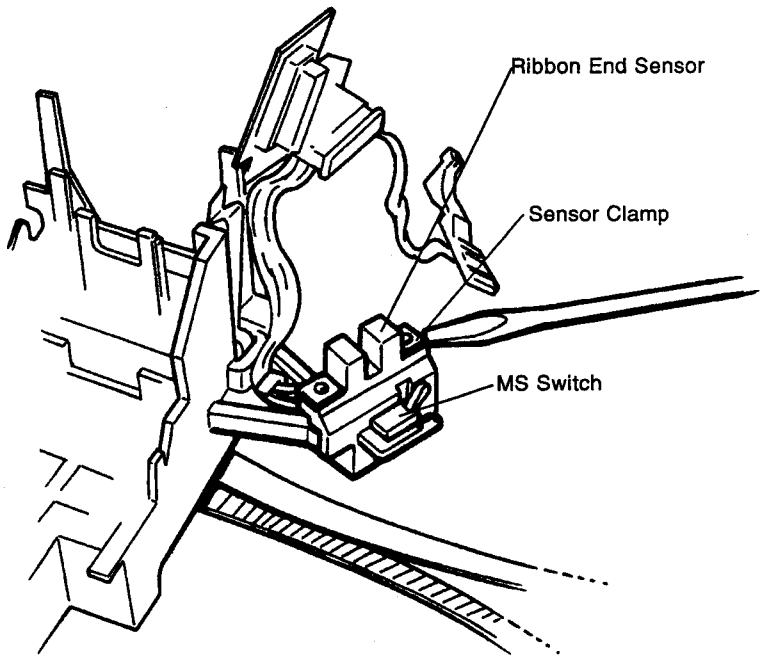


Figure 6-77 Ribbon Sensor Assembly

BOTTOM GUIDE ASSEMBLY REMOVAL

To remove the bottom guide assembly, first remove the

- middle cover,
- print head,
- card holder,
- driven pulley assembly,
- paper thickness setting lever,
- carrier assembly,
- feed roller unit, and
- platen assembly.

Then proceed as follows.

1. Remove two screws by inserting the screwdriver into the holes on the both left and right side of the paper guide (see Figure 6-78).
2. Remove the bottom guide assembly.

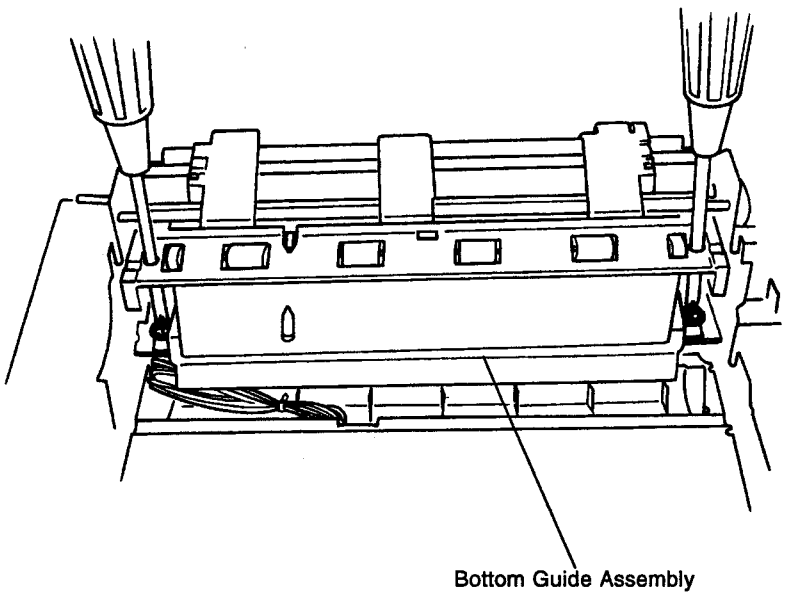


Figure 6-78 Bottom Guide Assembly

PAPER GUIDE REMOVAL

To remove the paper guide, first remove the

- middle cover,
- print head,
- card holder,
- driven pulley assembly,
- paper thickness setting lever,
- carrier assembly,
- platen assembly, and
- bottom guide assembly.

Then proceed as follows.

1. Lift up the front side off the paper guide and remove it from the printer (see Figure 6-79).

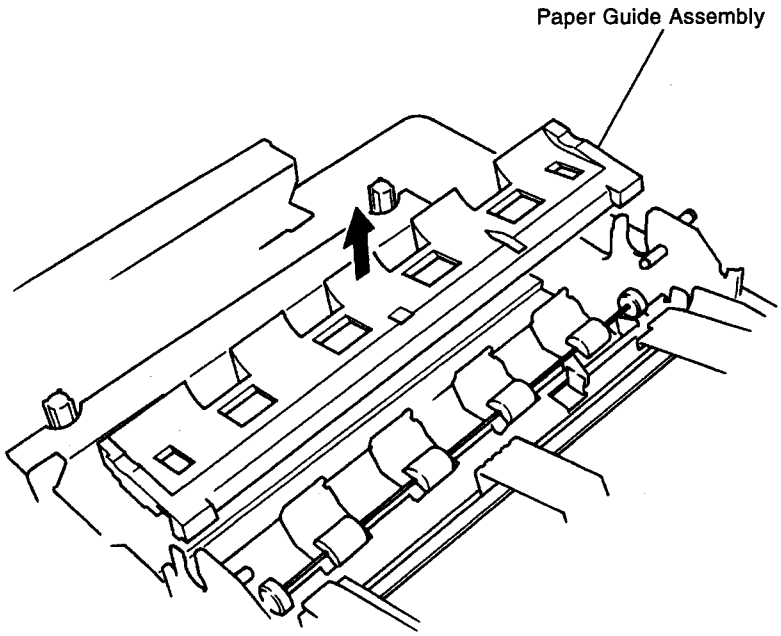


Figure 6-79 Paper Guide Assembly

MOTHER BOARD PCB ASSEMBLY REMOVAL

To remove the mother board PCB assembly, first remove the middle cover assembly and mechanism unit. Then proceed as follows.

1. Remove the shield cover by removing the four mounting screws (see Figure 6-80).
2. Disconnect DC cable from CN12 of the mother board PCB (see Figure 6-81).
3. Remove the six mounting screws (see Figure 6-81).
4. Lift off the mother board PCB assembly by disconnecting CN11 from CN41 on the connection board PCB assembly (see Figure 6-82).

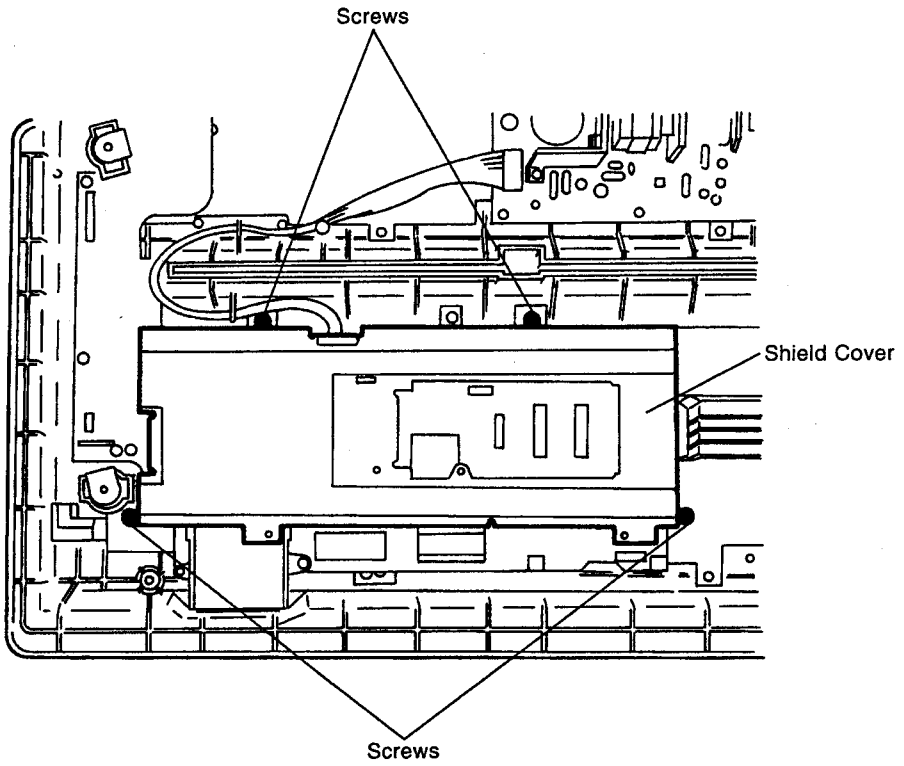


Figure 6-80 Shield Cover

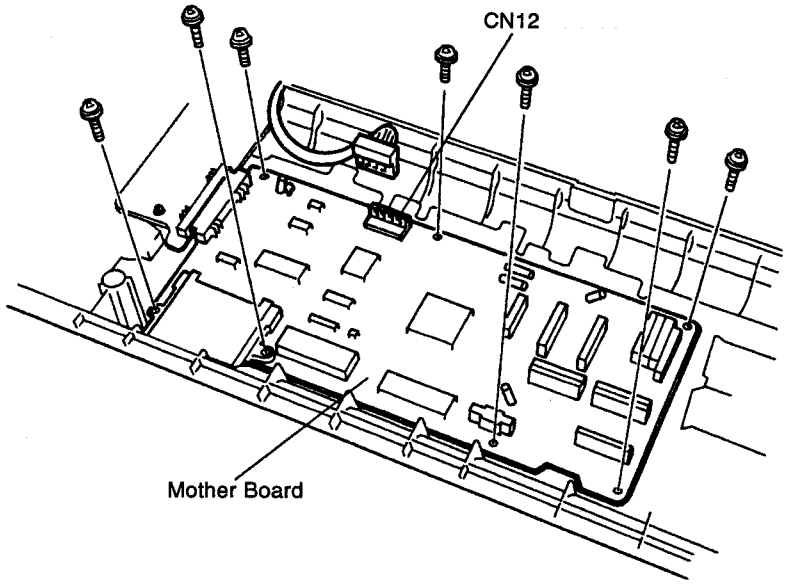


Figure 6-81 DC Cable Removal and Mother Board PCB Assembly Removal

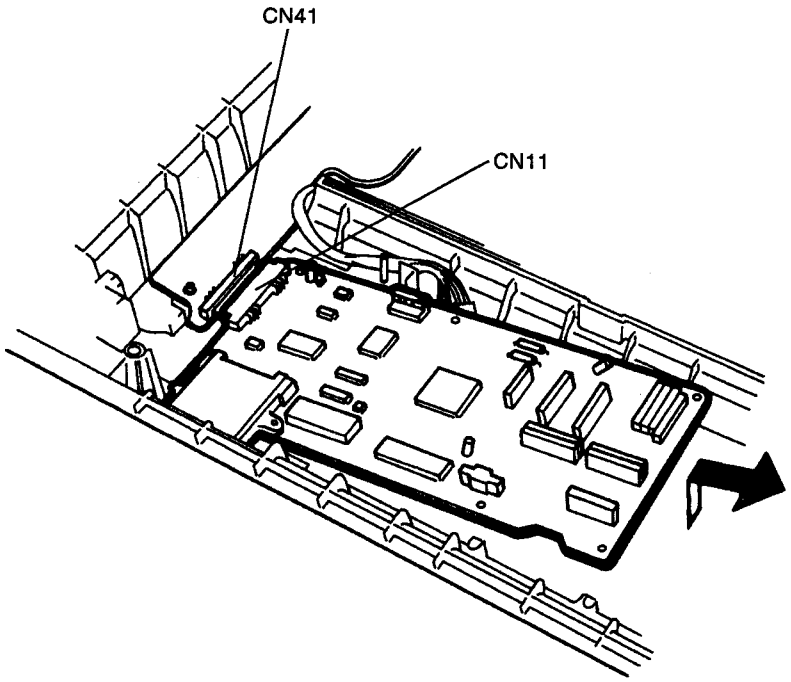


Figure 6-82 Connectors CN11 and CN41

CONNECTION BOARD REMOVAL

To remove the mother board, first remove the

- middle cover assembly,
- mechanism unit, and
- mother board.

Then proceed as follows.

1. Remove the six screws holding the connection board in place (see Figure 6-83).
2. Slide the connection board away from the side of the chassis, then lift the board out of the chassis.

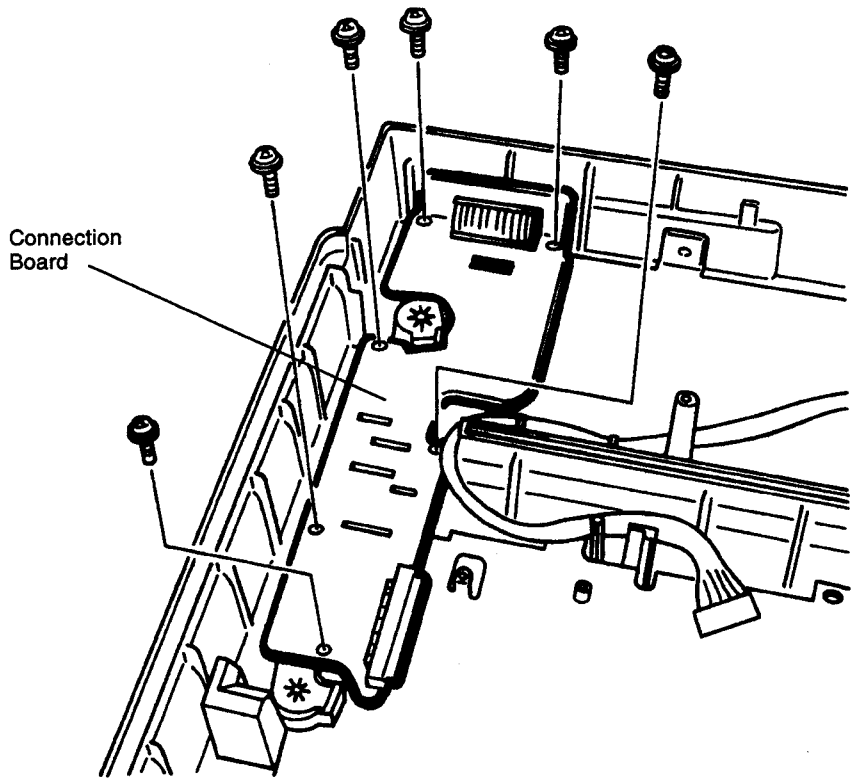


Figure 6-83 Connection Board

POWER SUPPLY PCB ASSEMBLY REMOVAL

To remove the power supply PCB assembly, first remove the middle cover assembly and mechanism assembly. Then proceed as follows.

1. Disconnect CN1 and CN2 from the power supply PCB assembly (see Figure 6-84).
2. Lift off the power supply PCB assembly by removing the six mounting screws (see Figure 6-84).

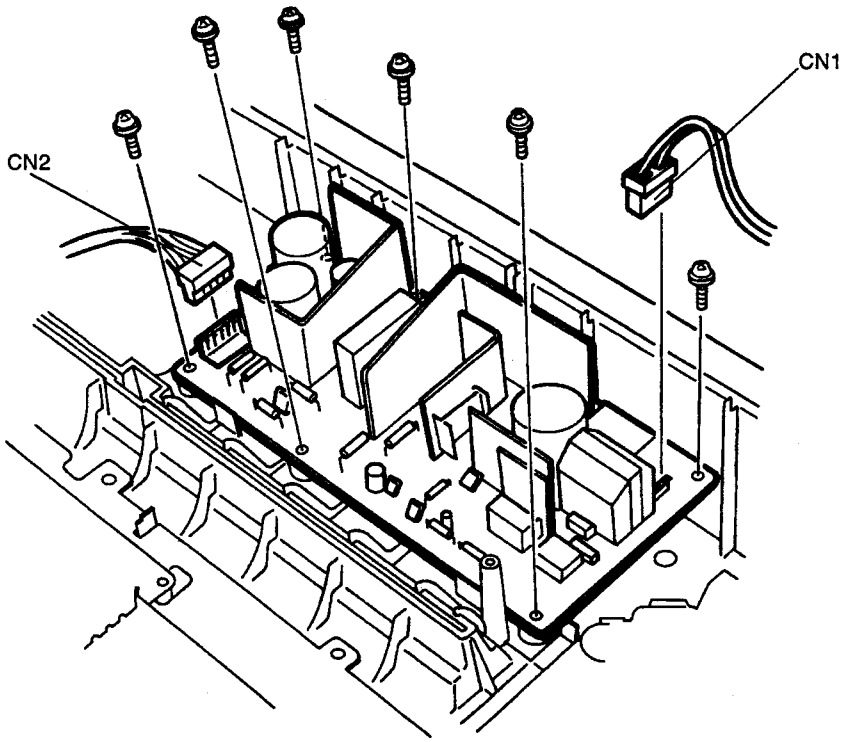
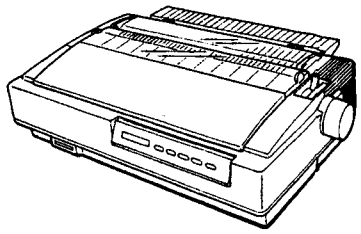


Figure 6-84 Power Supply PCB Assembly

Section 7



Illustrated Parts Breakdown

This section contains optional and spare parts numbers, and the mechanical illustrated parts breakdown (IPB) for the Pinwriter P62/P72 printers.

OPTIONAL PARTS

Table 7-1 through 7-4 provide order numbers for the Pinwriter's optional parts.

Table 7-1 Ribbons

RIBBON	ORDER NUMBER
Black Nylon Ribbon	808-867928-501-A
Black Multistrike Film Ribbon	808-869921-301-A
Color Nylon Ribbon	808-867928-311-A

Table 7-2 Paper Handling Options

OPTION	ORDER NUMBER
Sheet Feeder 4613	136-009953-301-A
Sheet Feeder 4713	136-009953-601-A
Dual Bin Sheet Feeder 4614	136-009953-401-A
Dual Bin Sheet Feeder 4714	136-009953-901-A
Pull Tractor 4619	136-009700-301-A
Pull Tractor 4719	136-009700-801-A

Table 7-3 Optional Kits

OPTION	ORDER NUMBER
Color Kit 5208	136-218469-001-A
Serial Interface Option 5207	136-218769-001-A

Table 7-4 Font Cards

FONT CARD	ORDER NUMBER
Times® Greek/Tech Math Helvetica® Greek/Tech Math	136-218775-701-A
OCR A/B Bar Code 39, UPC/EAN	136-218775-702-A
Letter Gothic	136-218775-703-A
Times 18PT/24PT	136-218775-704-A
Helvetica 18PT/24PT	136-218775-705-A
ITC Bookman® 10PT/18PT/24PT	136-218775-706-A
Super Focus Letter Gothic	136-218775-707-A
Bold Italic Prestige Pica	136-218775-708-A

SPARE PARTS

The recommended spare parts for the Pinwriter are listed in Table 7-5.

Table 7-5 Recommended Spare Parts Kit (136-263528-GRP-A) - 1/2

SPARE PART	ORDER NUMBER	QUANTITY* GRP: 300	800
Bottom Guide Assembly (N)	136-846277-001-A	1	—
Bottom Guide Assembly (W)	136-846277-501-A	—	1
Paper Guide (N)	136-846286-001-A	1	—
Paper Guide (W)	136-846286-501-A	—	1
Paper Release Arm	136-846287-001-A	1	1
LF Motor Unit	136-218660-001-A	1	1
SP Motor Unit	136-227698-001-A	1	1
Platen Assembly (N)	136-218461-001-A	1	—
Platen Assembly (W)	136-218461-501-A	—	1
H.P Sensor Assembly	808-820754-001-A	1	1
Option Gear	136-846288-001-A	1	1
Sensor & Switch assembly	136-870197-001-A	1	1
Carrier Subassembly (N)	136-870201-001-A	1	—
Carrier Subassembly (W)	136-870201-501-A	—	1
Piece (1)	136-846363-001-A	1	1
Carrier Cable (N) Assembly	136-844094-001-A	1	—
Carrier Cable (W) Assembly	136-844094-501-A	—	1
Card Holder Subassembly	136-870198-001-A	1	1
Planetarium Gear	136-846358-001-A	2	2
Planetarium Arm Subassembly	136-854350-001-A	1	1
Eccentric Bushing	136-846383-001-A	1	1
Gap Adjust Lever	136-870204-001-A	1	1
Tension Arm Assembly	136-846302-001-A	1	1
Ribbon Base (Black) Assembly	136-218465-001-A	1	1
Font Holder	136-843451-301-A	1	1
Right Side Frame Subassembly	136-846265-001-A	1	1
Left Side Frame Subassembly	136-846265-002-A	1	1
Guide Shaft (N)	136-846284-001-A	1	—
Guide Shaft (W)	136-846284-501-A	—	1
LF Gear	136-846310-001-A	1	1
Slide Gear	136-846311-001-A	1	1
Manual Feed Gear	136-846318-001-A	1	1
Tractor Bushing (RH)	136-846322-001-A	1	1
Tractor Bushing (LH)	136-846322-002-A	1	1
Tractor Gear	136-846323-001-A	1	1
Roller Support	136-846339-001-A	1	1
Pressure Roller (N)	136-846341-001-A	1	—
Pressure Roller (W)	136-846341-501-A	—	1
Pressure Roller (F)	136-846342-001-A	1	1
Rear Paper End Lever	136-846344-001-A	1	1
Bottom MDL Lever	136-846345-001-A	1	1
Card Holder Bracket	136-870189-002-A	1	1
Clamp Lever (LH)	136-846386-001-A	1	1
Clamp Lever (RH)	136-846386-002-A	1	1
Canopy (S)	136-868816-301-A	1	—
Canopy (L)	136-868817-801-A	—	1
DC Cable	808-857768-101-A	1	—
DC Cable	808-857768-201-A	—	1
SP Motor Assembly	808-805369-001-A	1	1
LF Motor Assembly	808-869546-001-A	1	1

Table 7-5 Recommended Spare Parts Kit (136-263528-GRP-A) - 2/2

SPARE PART	ORDER NUMBER	QUANTITY*	
		GRP: 300	800
Tractor Unit (N)	136-218463-001-A	1	—
Tractor Unit (W)	136-218463-501-A	—	1
Feed Roller Unit (N)	136-230164-301-A	1	—
Feed Roller Unit (W)	136-230164-801-A	—	1
Print Head assembly	136-227708-002-A	1	1
Top Cover Assembly (S)	136-220255-301-A	1	—
Top Cover Assembly (L)	136-220255-801-A	—	1
Base Cover Assembly (S)	136-220252-301-A	1	—
Base Cover Assembly (L)	136-220252-801-A	—	1
Upper Cover Assembly (S)	136-220253-301-A	1	—
Upper Cover Assembly (L)	136-220253-801-A	—	1
Middle Cover assembly (S)	136-220254-301-A	1	—
Middle Cover Assembly (L)	136-220254-801-A	—	1
PSD Power (C) PCB	808-891104-313-A	1	1
PSG C1 Power PCB	808-891379-313-A	1	1
G8KNHA PCB Assembly	136-438082-001-A	1	1
G8ESV PCB Assembly	136-436274-001-A	1	1
PSG Operator Panel	808-812468-301-A	1	1
Ribbon Feed Pulley	136-846354-001-A	1	1
Ribbon Feed Wire (N) Assembly	808-812396-001-A	1	—
Ribbon Feed Wire (W) Assembly	808-812396-001-A	—	1
Tractor Assembly R	808-868140-011-A	1	1
Tractor Assembly L	808-868140-012-A	1	1
Carrier Cable Cover	136-868802-301-A	1	1
POW S/W Cable	808-740134-001-A	1	1
Platen Knob	136-846283-001-A	1	1
Sheet Guide Assembly (S)	136-220257-301-A	1	—
Sheet Guide Assembly (L)	136-220257-801-A	—	1
Paper Set Piece (L)	136-868820-301-A	1	1
Paper Set Piece (R)	136-868821-301-A	1	1
Sheet Guide Cover (L)	136-868823-801-A	—	1
Sheet Guide Cover (S)	136-868823-301-A	1	—

* GRP 300: Model P62
GRP 800: Model P72

ILLUSTRATED PARTS BREAKDOWN

The following explains the organization of the parts list that accompanies each IPB.

- Item — Indicates the item numbers referred to in the callouts.
- Part Number — Provides the NEC part number for ordering spare or replacement parts. Attaching hardware, such as screw, nuts, and washers, are described with six codes as shown in Figure 7-1. The screw in Figure 7-1 is a galvanized pan-head metric screw with cross groove, where nominal diameter is 3 mm and length is 6 mm. The codes are described in Table 7-6.
- Description — Provides a brief description of the part.
- Quantity — Indicates the number of parts per unit.

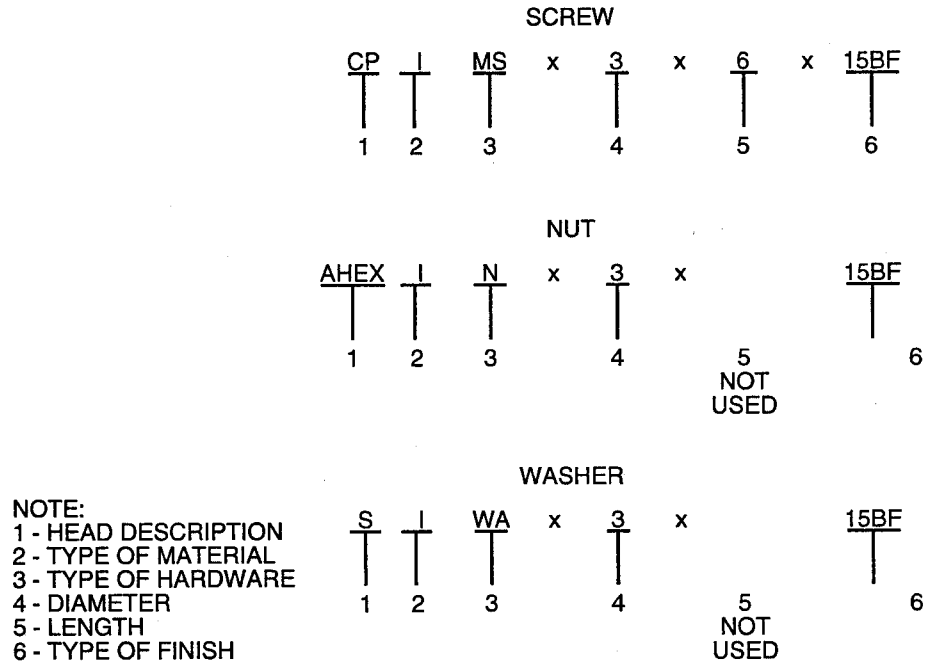

SCREW
CP I MS x 3 x 6 x 15BF
1 2 3 4 5 6
NUT
AHEX I N x 3 x 15BF
1 2 3 4 5 6
NOT USED
WASHER
S I WA x 3 x 15BF
1 2 3 4 5 6
NOT USED
NOTE:
1 - HEAD DESCRIPTION
2 - TYPE OF MATERIAL
3 - TYPE OF HARDWARE
4 - DIAMETER
5 - LENGTH
6 - TYPE OF FINISH

Figure 7-1 Typical Codes for Attaching Hardware

Table 7-6 Typical Codes for Attaching Hardware

CALLOUT	CODE	DESCRIPTION
1	CP	Pan-head screw with cross groove
	CF	Flat-head screw with cross grove
	L-CP	CP (see above) with spring washer
	P-CP	CP with plain washer
	S-CP	CP with small washer
	PL-CP	CP with plain and spring washers
	SL-CP	CP with small and spring washers
	HEX	Hexagon-head screw
	AHEX	A-type hexagon nut
	BHEX	B-type hexagon nut
	S	Small washer
	P	Plain washer
	#2xL	Spring washer
2	I	Iron
	B	Brass
	ST	Spring steel
3	MS	Metric screw
	N	Nut
	WA	Washer
4	x mm	Nominal diameter in mm
5	x mm	Length of screw in mm
6	15BF	Galvanized, lustrous coloration, chromate finish
	3GF	Lustrous nickel-plated finish

PART NAME	PART NUMBER	FIG.NO.
PINWRITER P62	136-227693-301-0	7-4
├ PRINTER UNIT(N)	136-227694-301-A	7-4
│ ├ MECHANISM UNIT (N)	136-227695-301-A	7-6
│ │ ├ FRAME UNIT (N)	136-227696-301-A	7-8
│ │ │ ├ FRAME ASSEMBLY (N)	136-218457-001-A	7-10
│ │ │ │ ├ RIGHT SIDE FRAME SUBASSEMBLY	136-846265-001-A	7-12
│ │ │ │ ├ LEFT SIDE FRAME SUBASSEMBLY	136-846265-002-A	7-12
│ │ │ │ ├ MAIN STAY ASSEMBLY (N)	136-218466-001-A	7-12
│ │ │ │ │ ├ MAIN STAY (N)	136-846337-001-A	7-14
│ │ │ │ │ ├ REAR PAPER END LEVER	136-846344-001-A	7-14
│ │ │ │ │ ├ BOTTOM MDL LEVER	136-846345-001-A	7-14
│ │ │ │ │ ├ ROLLER SUPPORT	136-846339-001-A	7-14
│ │ │ │ │ ├ ROLLER SUPPORT SPRING	136-846306-001-A	7-14
│ │ │ │ │ ├ ROLLER SUPPORT BRACKET	136-846338-001-A	7-14
│ │ │ │ │ ├ RELEASE SHAFT (N)	136-846340-001-A	7-14
│ │ │ │ │ ├ PRESSURE ROLLER (N)	136-846341-001-A	7-14
│ │ │ │ │ ├ PRESSURE ROLLER (F)	136-846342-001-A	7-14
│ │ │ │ │ ├ PRESSURE SPRING (N)	136-846406-001-A	7-14
│ │ │ │ │ ├ BOTTOM GUIDE ASSEMBLY (N)	136-846277-001-A	7-14
│ │ │ │ │ └ SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	7-14
│ │ │ │ ├ FRONT STAY (N)	136-846297-001-A	7-12
│ │ │ │ ├ PAPER GUIDE (N)	136-846286-001-A	7-12
│ │ │ │ ├ WIRE SADDLE WS-1NS	808-811031-001-A	7-12
│ │ │ │ └ SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	7-12
│ │ │ ├ PAPER RELEASE ARM	136-846287-001-A	7-10
│ │ │ ├ LF MOTOR UNIT	136-218460-001-A	7-10
│ │ │ │ ├ LF MOTOR FRAME SUBASSEMBLY	136-846276-001-A	7-10
A B C D E		

Figure 7-2 Family Tree-Pinwriter P62 (1/14)

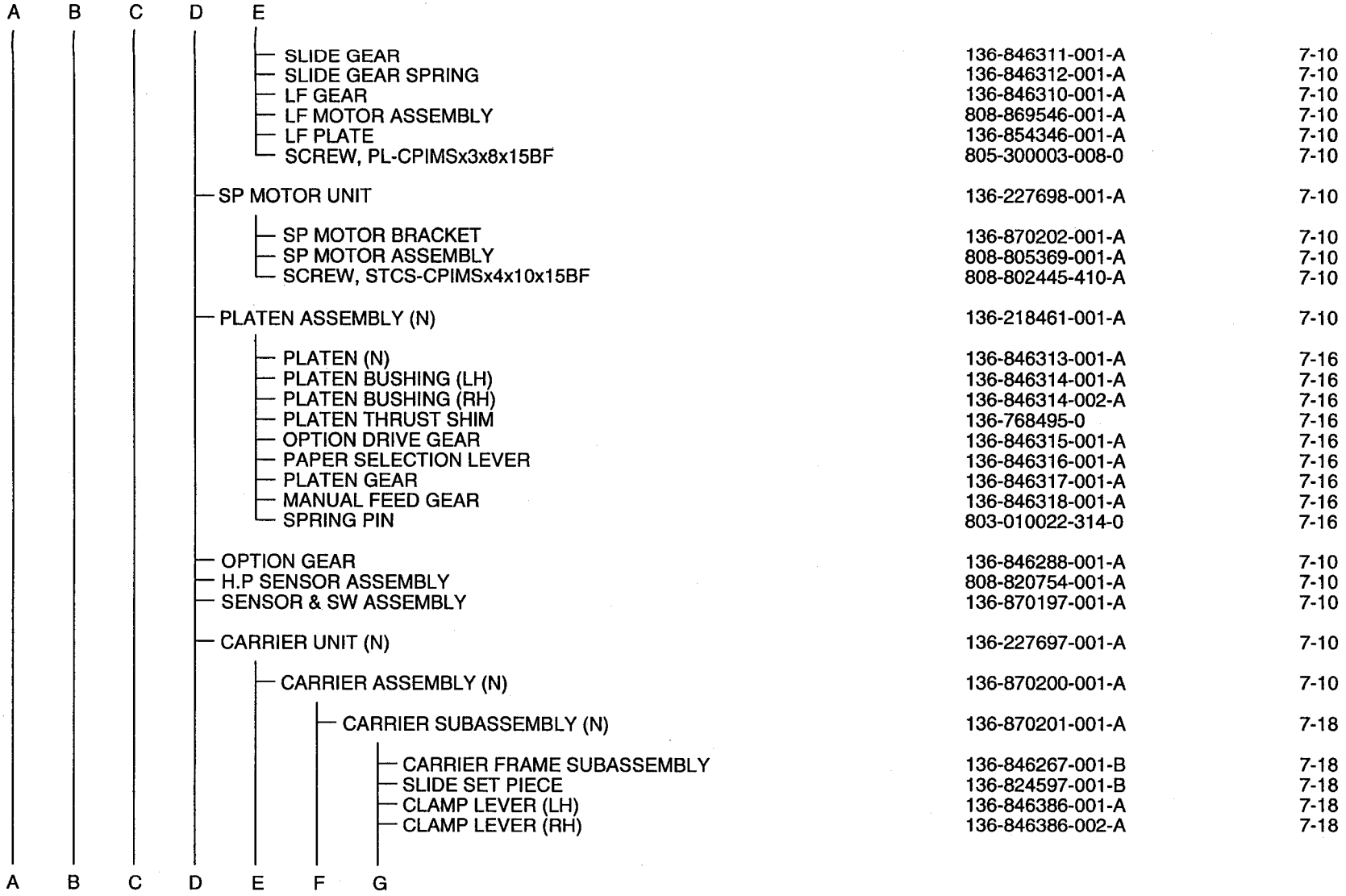


Figure 7-2 Family Tree-Pinwriter P62 (2/14)

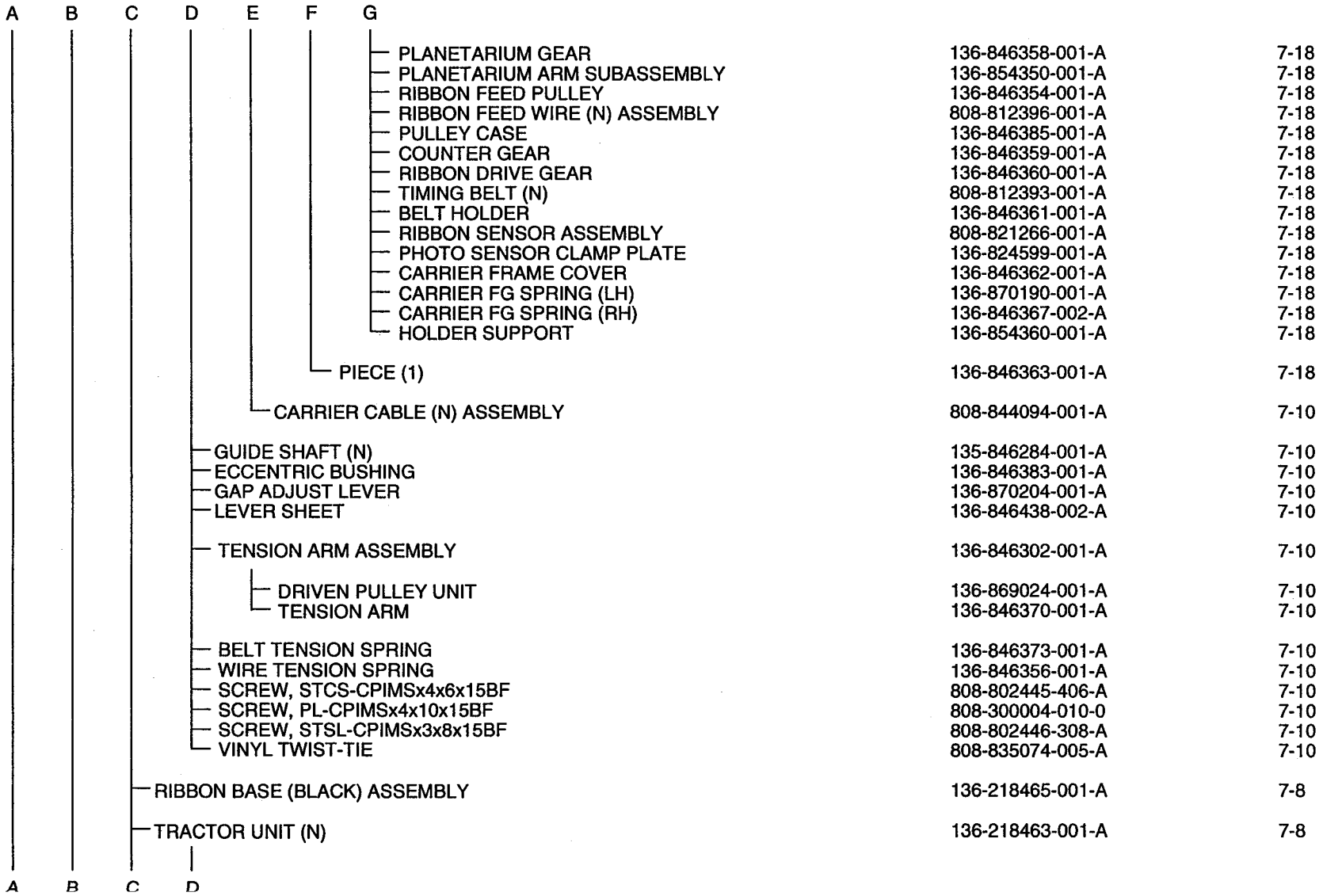
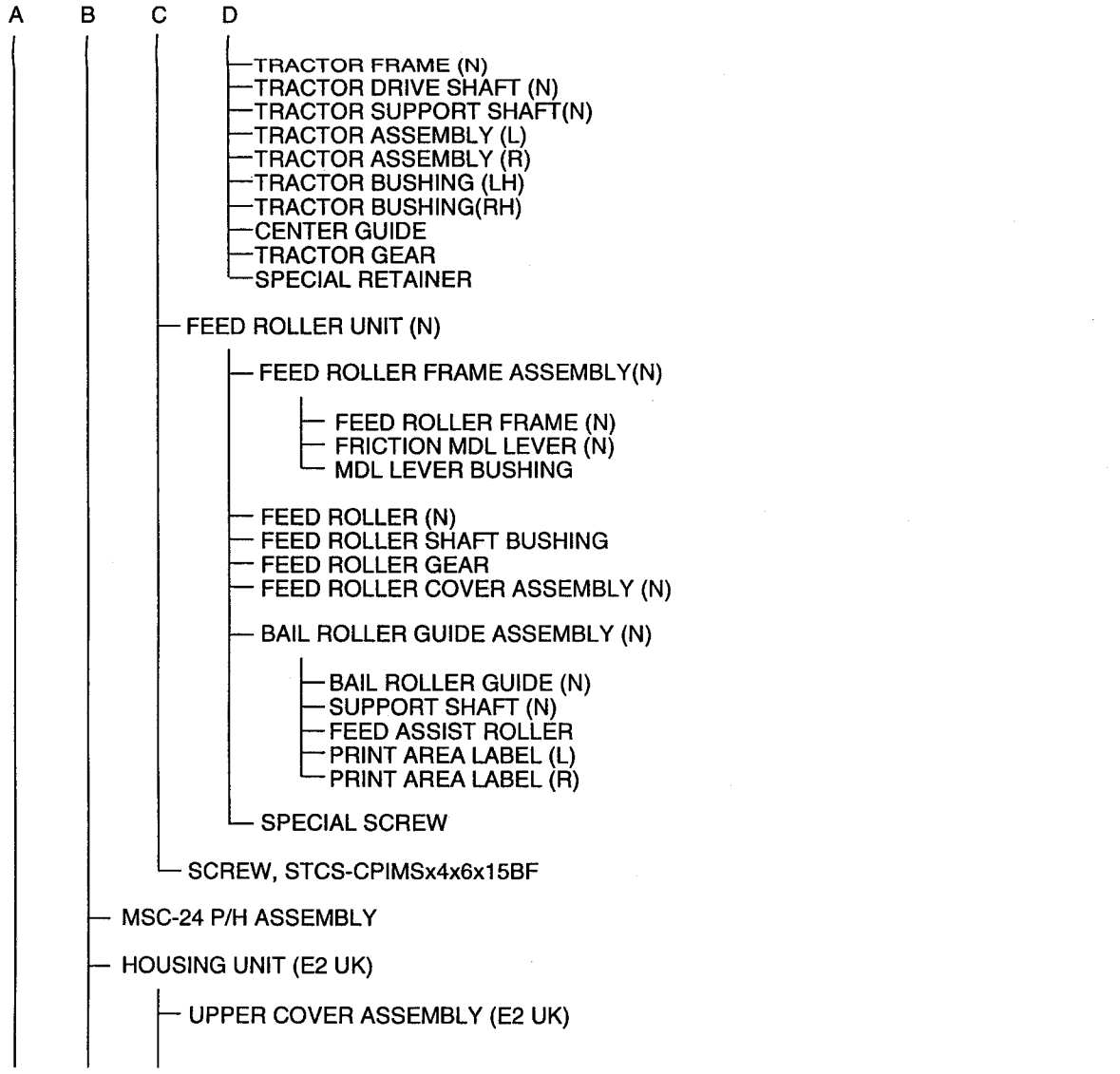

A B C D E F G
PLANETARIUM GEAR 136-846358-001-A 7-18
PLANETARIUM ARM SUBASSEMBLY 136-854350-001-A 7-18
RIBBON FEED PULLEY 136-846354-001-A 7-18
RIBBON FEED WIRE (N) ASSEMBLY 808-812396-001-A 7-18
PULLEY CASE 136-846385-001-A 7-18
COUNTER GEAR 136-846359-001-A 7-18
RIBBON DRIVE GEAR 136-846360-001-A 7-18
TIMING BELT (N) 808-812393-001-A 7-18
BELT HOLDER 136-846361-001-A 7-18
RIBBON SENSOR ASSEMBLY 808-821266-001-A 7-18
PHOTO SENSOR CLAMP PLATE 136-824599-001-A 7-18
CARRIER FRAME COVER 136-846362-001-A 7-18
CARRIER FG SPRING (LH) 136-870190-001-A 7-18
CARRIER FG SPRING (RH) 136-846367-002-A 7-18
HOLDER SUPPORT 136-854360-001-A 7-18
PIECE (1) 136-846363-001-A 7-18
CARRIER CABLE (N) ASSEMBLY 808-844094-001-A 7-10
GUIDE SHAFT (N) 135-846284-001-A 7-10
ECCENTRIC BUSHING 136-846383-001-A 7-10
GAP ADJUST LEVER 136-870204-001-A 7-10
LEVER SHEET 136-846438-002-A 7-10
TENSION ARM ASSEMBLY 136-846302-001-A 7-10
DRIVEN PULLEY UNIT 136-869024-001-A 7-10
TENSION ARM 136-846370-001-A 7-10
BELT TENSION SPRING 136-846373-001-A 7-10
WIRE TENSION SPRING 136-846356-001-A 7-10
SCREW, STCS-CPIMSx4x6x15BF 808-802445-406-A 7-10
SCREW, PL-CPIMSx4x10x15BF 808-300004-010-0 7-10
SCREW, STSL-CPIMSx3x8x15BF 808-802446-308-A 7-10
VINYL TWIST-TIE 808-835074-005-A 7-10
RIBBON BASE (BLACK) ASSEMBLY 136-218465-001-A 7-8
TRACTOR UNIT (N) 136-218463-001-A 7-8
A B C D

Figure 7-2 Family Tree-Pinwriter P62 (3/14)



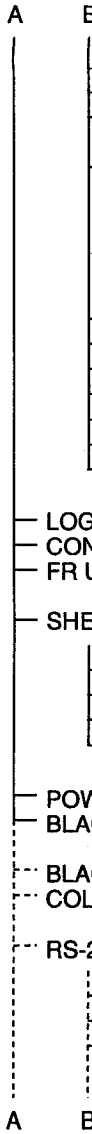
TRACTOR FRAME (N)	136-846319-001-A	7-19
TRACTOR DRIVE SHAFT (N)	136-846320-001-A	7-19
TRACTOR SUPPORT SHAFT(N)	136-846321-001-A	7-19
TRACTOR ASSEMBLY (L)	808-868140-012-A	7-19
TRACTOR ASSEMBLY (R)	808-868140-011-A	7-19
TRACTOR BUSHING (LH)	136-846322-002-A	7-19
TRACTOR BUSHING(RH)	136-846322-001-A	7-19
CENTER GUIDE	136-824533-001-A	7-19
TRACTOR GEAR	136-846323-001-A	7-19
SPECIAL RETAINER	136-854347-001-A	7-19
FEED ROLLER UNIT (N)	136-230164-301-A	7-8
FEED ROLLER FRAME ASSEMBLY(N)	136-846273-001-A	7-21
FEED ROLLER FRAME (N)	136-846331-001-A	7-21
FRICTION MDL LEVER (N)	136-846332-001-A	7-21
MDL LEVER BUSHING	136-846305-001-A	7-21
FEED ROLLER (N)	136-846326-001-A	7-21
FEED ROLLER SHAFT BUSHING	136-846328-001-A	7-21
FEED ROLLER GEAR	136-846329-001-A	7-21
FEED ROLLER COVER ASSEMBLY (N)	136-878775-301-A	7-21
BAIL ROLLER GUIDE ASSEMBLY (N)	136-227825-301-A	7-21
BAIL ROLLER GUIDE (N)	136-846298-001-A	7-21
SUPPORT SHAFT (N)	136-846368-001-A	7-21
FEED ASSIST ROLLER	136-846369-001-A	7-21
PRINT AREA LABEL (L)	136-707779-001-A	7-21
PRINT AREA LABEL (R)	136-707779-002-A	7-21
SPECIAL SCREW	136-846304-001-A	7-21
SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	7-8
MSC-24 P/H ASSEMBLY	136-227708-002-A	7-6
HOUSING UNIT (E2 UK)	136-220250-301-A	7-6
UPPER COVER ASSEMBLY (E2 UK)	136-220253-301-A	7-6

Figure 7-2 Family Tree-Pinwriter P62 (4/14)

MIDDLE COVER ASSEMBLY (S)	136-220254-301-A	7-25
TOP COVER ASSEMBLY (E2 UK)	136-220255-301-A	7-25
TOP COVER SUBASSEMBLY (E2 UK)	136-220256-301-A	7-25
CANOPY ASSEMBLY (S)	136-227822-301-A	7-25
BASE COVER ASSEMBLY (E2 UK)	136-220252-301-A	7-6
BASE COVER (S)	136-868797-301-A	7-23
BASE CHASSIS (S)	136-868799-301-A	7-23
FRAME FOOT	136-868844-001-A	7-23
FG PLATE	136-843459-001-A	7-23
SPACER	136-868842-001-A	7-23
SCREW, STCS-CPIMSx3x6x15BF	808-802445-306-A	7-23
SCREW, STSL-CPIMSx4x12x15BF	808-802446-412-A	7-23
SCREW, PCBTSx4x8x15BF	808-802045-408-0	7-23
SILENT PLATE S (CANOPY)	136-877569-001-A	7-6
SCREW, CPIMSx4x8x3GF	805-000104-008-0	7-6
WASHER, #2STLWAx4x3GF	805-622104-0	7-6
WASHER, PIWAx4x3GF	805-610104-0	7-6
SCREW, PCBTSx3x6x15KF	808-802555-306-A	7-6
PSG OPERATOR PANEL	808-812468-301-A	7-6
OPERATOR PANEL	136-868803-301-A	7-27
OPERATOR PANEL SHEET	136-868832-301-A	7-27
OPERATOR PANEL PCB ASSEMBLY	808-812468-602-A	7-27
SCREW, #2CPIMSx2.6x6x15BF	805-060026-006-0	7-27
SCREW, PCBTSx2x5x15BF	808-802045-205-0	7-27
POWER BOARD	808-XXXXXX-313-A*	7-6
MOTHER BOARD, G8KNHA	136-438082-001-A	7-6
CONNECTION BOARD, G8ESV	136-436274-001-A	7-6
DC CABLE	808-857768-101-A	7-6
PLATEN KNOB	136-846283-001-A	7-6
FONT HOLDER	136-843451-301-A	7-6
SHIELD COVER ASSEMBLY	136-227824-301-A	7-6
ROM COVER	136-868833-301-A	7-6
CARRIER CABLE COVER	136-868802-301-A	7-6

* 808-891104-313-A PSD POWER (C)
808-891379-313-A PSG-C1 POWER

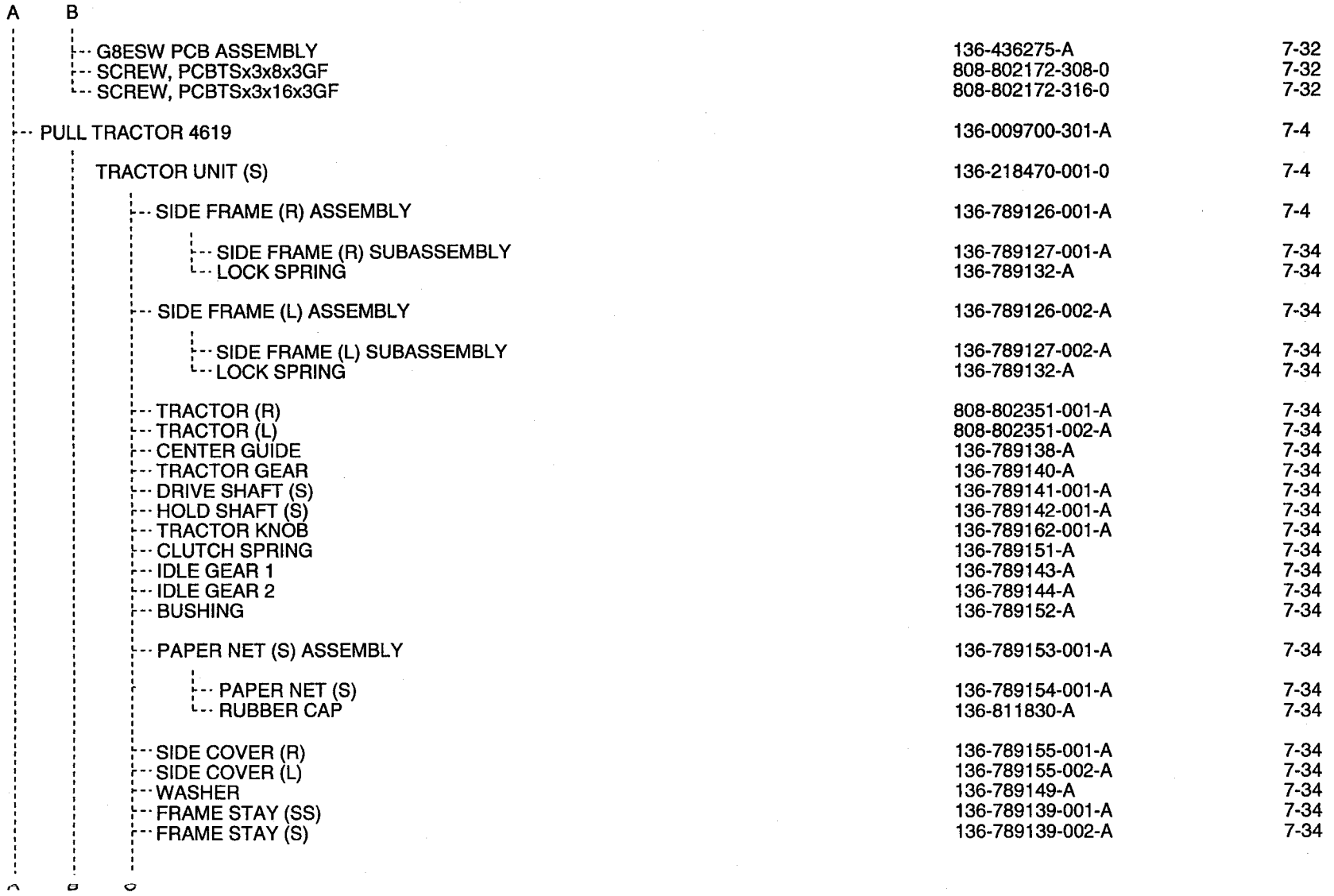
Figure 7-2 Family Tree-Pinwriter P62 (5/14)



CABLE HOLDER	136-868843-301-A	7-6
POWER SWITCH CABLE	808-740134-301-A	7-6
FG SPRING	136-846906-001-A	7-6
CARD HOLDER SUBASSEMBLY	136-870198-001-A	7-6
CARD HOLDER	136-870188-002-A	7-6
PROTECT PLATE	136-846366-101-A	7-6
SENSOR LOCK SPRING	136-870192-001-A	7-6
CARD HOLDER BRACKET	136-870189-002-A	7-6
SCREW, PL-CPIMSx5x8x15BF	805-300005-008-0	7-6
SCREW, STPL-CPIMSx3x10x15BF	808-802585-310-A	7-6
SCREW, CS-CPIMSx3x5x15BF	808-830044-305-0	7-6
SCREW, STPL-CPIMSx4x8x15BF	808-802585-408-A	7-6
NOWPOINT SET SCREW, M2.6L3	808-802002-263-0	7-6
SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	7-6
LOGO LABEL	136-707778-201-A	7-4
CONTROL NAMEPLATE	135-707776-301-A	7-4
FR UNIT STOPPER	136-854361-001-A	7-4
SHEET GUIDE ASSEMBLY (S)	136-220257-301-A	7-4
SHEET GUIDE SUBASSEMBLY (S)	136-227821-301-A	7-4
SHEET GUIDE COVER (S)	136-868822-301-A	7-4
PAPER SET PIECE (L)	136-868820-301-A	7-4
PAPER SET PIECE (R)	136-868821-301-A	7-4
POWER CORD SET	808-846856-001-A	7-4
BLACK NYLON RIBBON	808-867928-501-A	7-4
BLACK MULTISTRIKE FILM RIBBON	808-869921-301-A	7-4
COLOR NYLON RIBBON	808-867928-311-A	7-4
RS-232C KIT	136-217741-001-A	7-4
SERIAL I/F CASE (U)	136-846899-001-A	7-32
SERIAL I/F CASE (L)	136-846900-001-A	7-32
SET SCREW	136-846884-001-A	7-32

Figure 7-2 Family Tree-Pinwriter P62 (6/14)

NOTE: Dotted lines denote option.



G8ESW PCB ASSEMBLY	136-436275-A	7-32
SCREW, PCBTSx3x8x3GF	808-802172-308-0	7-32
SCREW, PCBTSx3x16x3GF	808-802172-316-0	7-32
PULL TRACTOR 4619	136-009700-301-A	7-4
TRACTOR UNIT (S)	136-218470-001-0	7-4
SIDE FRAME (R) ASSEMBLY	136-789126-001-A	7-4
SIDE FRAME (R) SUBASSEMBLY	136-789127-001-A	7-34
LOCK SPRING	136-789132-A	7-34
SIDE FRAME (L) ASSEMBLY	136-789126-002-A	7-34
SIDE FRAME (L) SUBASSEMBLY	136-789127-002-A	7-34
LOCK SPRING	136-789132-A	7-34
TRACTOR (R)	808-802351-001-A	7-34
TRACTOR (L)	808-802351-002-A	7-34
CENTER GUIDE	136-789138-A	7-34
TRACTOR GEAR	136-789140-A	7-34
DRIVE SHAFT (S)	136-789141-001-A	7-34
HOLD SHAFT (S)	136-789142-001-A	7-34
TRACTOR KNOB	136-789162-001-A	7-34
CLUTCH SPRING	136-789151-A	7-34
IDLE GEAR 1	136-789143-A	7-34
IDLE GEAR 2	136-789144-A	7-34
BUSHING	136-789152-A	7-34
PAPER NET (S) ASSEMBLY	136-789153-001-A	7-34
PAPER NET (S)	136-789154-001-A	7-34
RUBBER CAP	136-811830-A	7-34
SIDE COVER (R)	136-789155-001-A	7-34
SIDE COVER (L)	136-789155-002-A	7-34
WASHER	136-789149-A	7-34
FRAME STAY (SS)	136-789139-001-A	7-34
FRAME STAY (S)	136-789139-002-A	7-34

Figure 7-2 Family Tree-Pinwriter P62 (7/14)

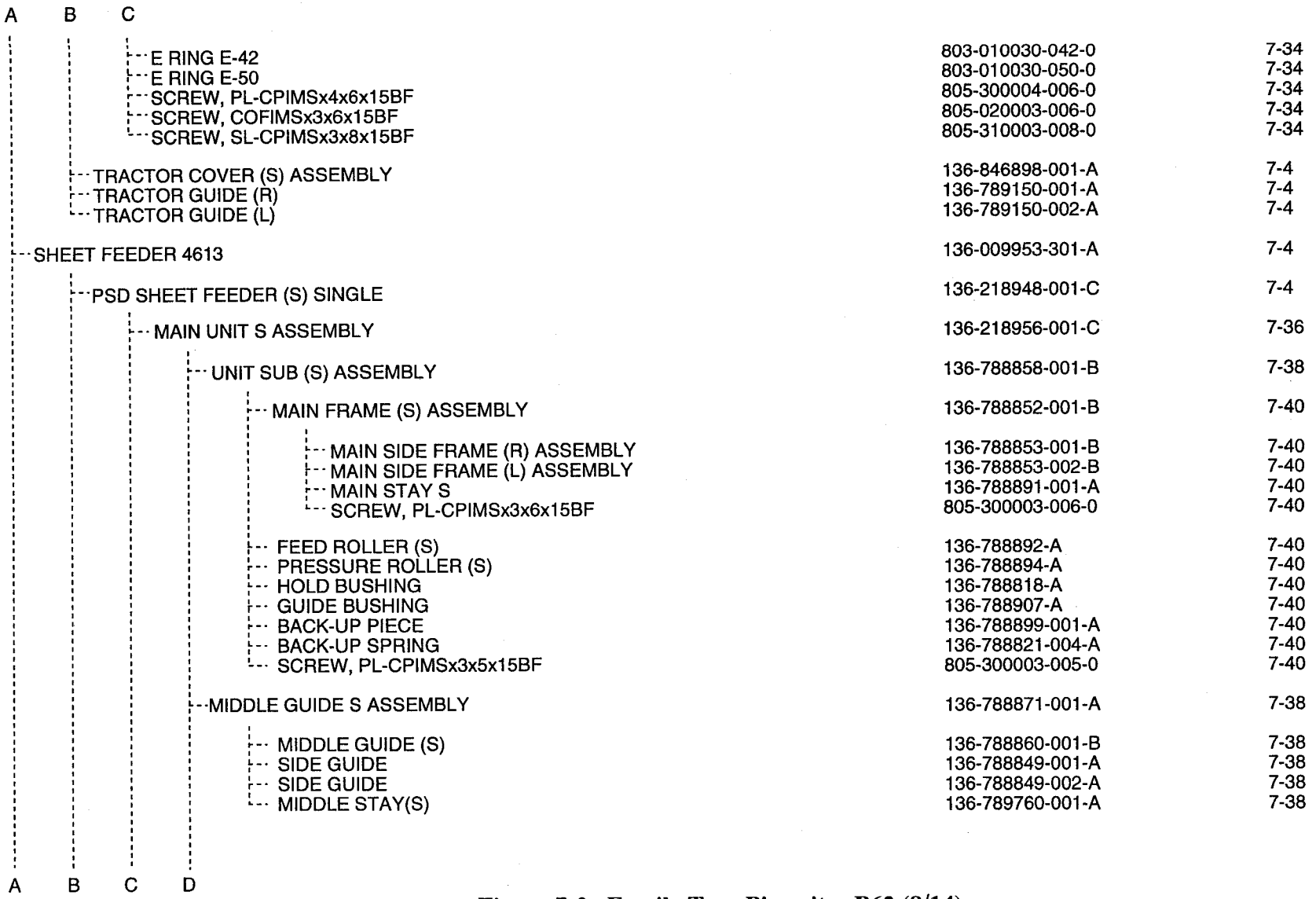
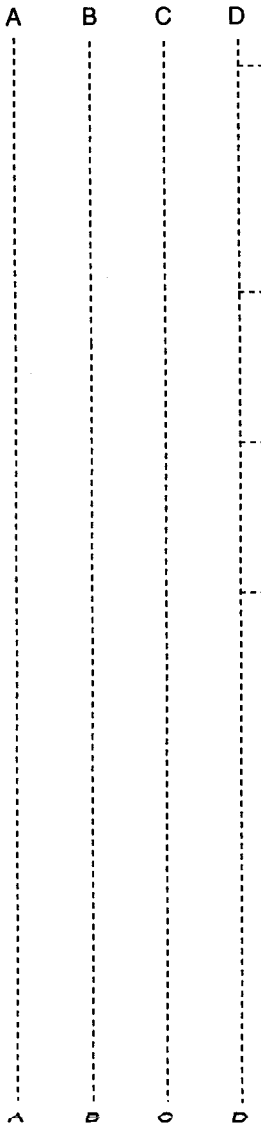
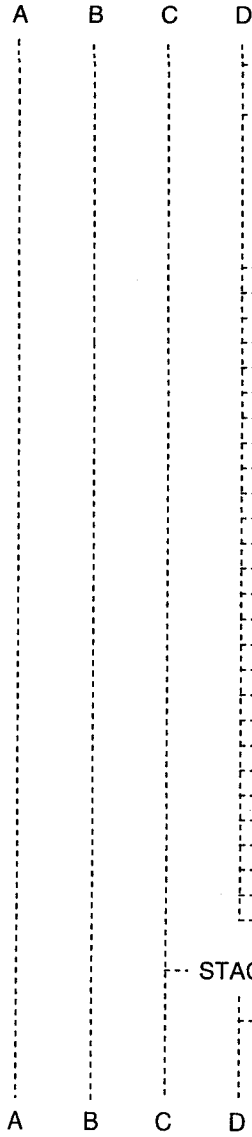


Figure 7-2 Family Tree-Pinwriter P62 (8/14)



EJECT GUIDE (S) ASSEMBLY	136-788870-001-B	7-38
EJECT GUIDE (S) SUBASSEMBLY	136-789409-001-B	7-38
STACKER ROLLER (S)	136-788903-A	7-38
BUSHING D	136-788901-001-A	7-38
BUSHING D	136-788901-002-A	7-38
EJECT ROLLER GEAR	136-788843-A	7-38
E RING (E-37)	803-010030-037-A	7-38
BOTTOM STACKER S ASSEMBLY	136-788869-001-B	7-38
BOTTOM STACKER (S) SUBASSEMBLY	136-789410-001-B	7-38
FRONT STAY S	136-788905-A	7-38
SCREW, #2CBTSx3x6x3GF	805-230103-006-0	7-38
REAR STACKER (S) ASSEMBLY	136-788822-001-A	7-38
REAR STACKER	136-788823-001-A	7-38
E.S.D BRUSH	136-788824-001-A	7-38
SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	7-38
HOPPER UNIT ASSEMBLY	136-788825-001-B	7-38
HOPPER BASE	136-788791-001-A	7-38
HOPPER BASE	136-788791-002-A	7-38
HOPPER COVER	136-788797-001-A	7-38
HOPPER COVER	136-788797-002-A	7-38
SEPARATOR	136-788792-001-A	7-38
SEPARATOR	136-788792-002-A	7-38
HOPPER PLATE ASSEMBLY	136-788794-001-A	7-38
HOPPER PLATE ASSEMBLY	136-788794-002-A	7-38
SEPARATOR SPRING	136-788793-001-A	7-38
PRESSURE SPRING	136-788861-002-A	7-38
SELECT ARM	136-788798-A	7-38
LOCK PIECE	136-787516-001-A	7-38
HOPPER RELEASE BAR	136-788817-001-A	7-38
HOLD SHAFT	136-788809-001-A	7-38
PICK ROLLER COVER	136-790905-001-A	7-38
PICK ROLLER COVER	136-790905-002-A	7-38
SCREW, #2CBTSx3x8x3GF	805-230103-008-0	7-38

Figure 7-2 Family Tree-Pinwriter P62 (9/14)



FEED ROLLER GEAR ASSEMBLY	808-805313-001-A	7-38
CLUTCH ASSEMBLY	136-788800-001-B	7-38
TOP GEAR ASSEMBLY	136-788801-001-B	7-38
MIDDLE DISK ASSEMBLY	136-788804-B	7-38
BASE GEAR 3	136-788889-A	7-38
PICK ROLLER SHAFT	136-788876-001-A	7-38
EJECT ROLLER 2 (S)	136-788872-001-A	7-38
CLUTCH HOLDER SUBASSEMBLY	136-789408-A	7-38
IDLE GEAR A	136-788837-A	7-38
IDLE GEAR B	136-788838-A	7-38
IDLE GEAR C	136-788880-A	7-38
IDLE GEAR D	136-788836-A	7-38
IDLE GEAR E	136-788910-A	7-38
IDLE GEAR F	136-788912-A	7-38
IDLE GEAR G	136-788911-A	7-38
EJECT ROLLER GEAR	136-788843-A	7-38
PICK ROLLER GEAR	136-788841-A	7-38
RELEASE LEVER	136-788814-001-A	7-38
RELEASE LEVER	136-788814-002-A	7-38
PICK ROLLER	136-788811-001-A	7-38
PICK ROLLER	136-788811-002-A	7-38
SELECT LEVER	136-788799-A	7-38
EJECT SPRING	136-788863-005-A	7-38
HOLD BUSHING	136-788818-A	7-38
SIDE COVER L	136-788884-001-A	7-38
SIDE COVER R	136-788885-002-A	7-38
NUT WASHER	136-789407-A	7-38
SCREW, PL-CPIMSx3x6x15BF	805-300003-006-0	7-38
SCREW, SL-CPIMSx3x10x15BF	805-310003-010-0	7-38
SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	7-38
E RING (E-32)	803-010030-032-0	7-38
E RING (E-40)	803-010030-040-0	7-38
STACKER GUIDE ASSEMBLY	136-788828-001-A	7-36
STACKER GUIDE	136-788834-001-A	7-36

Figure 7-2 Family Tree-Pinwriter P62 (10/14)

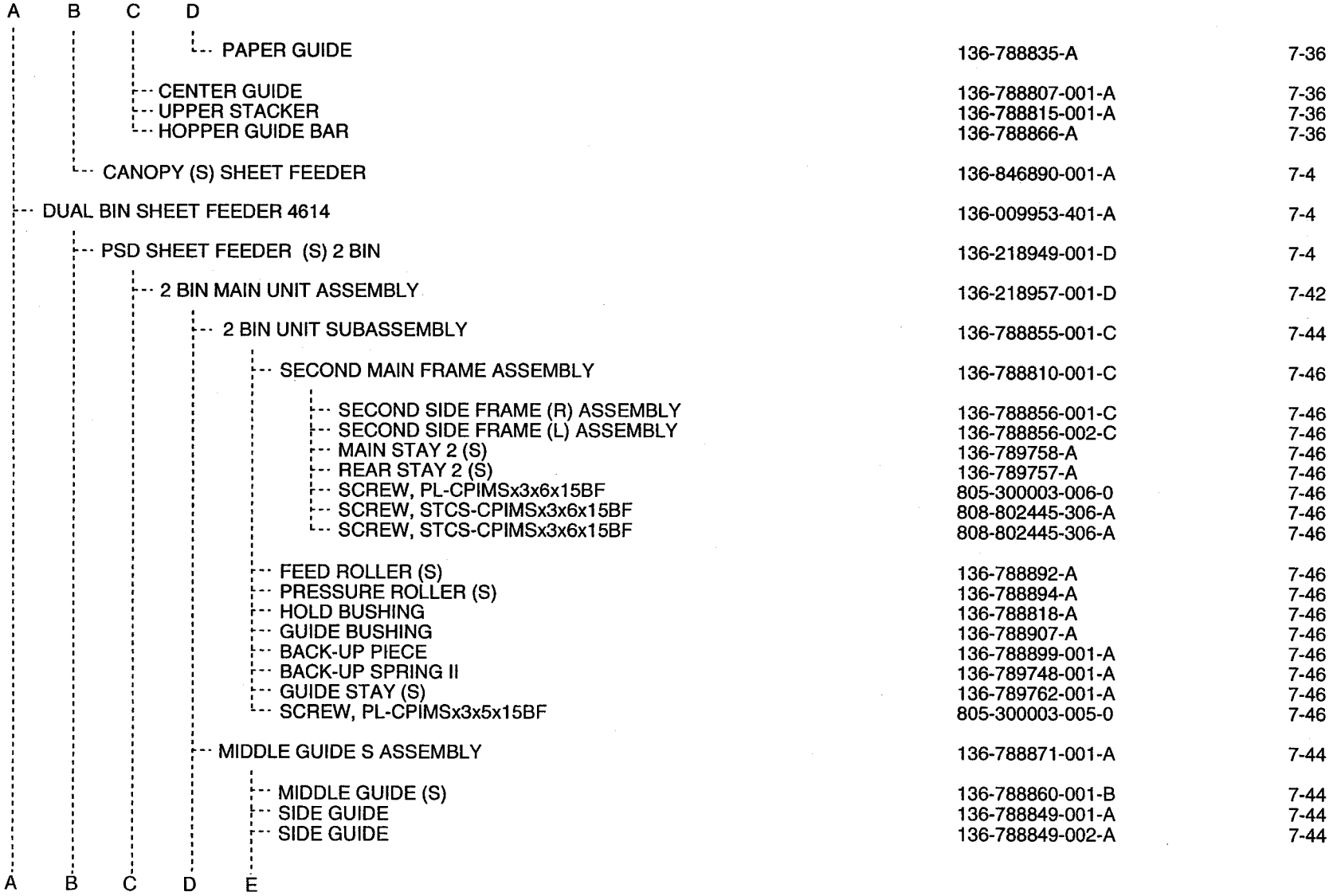
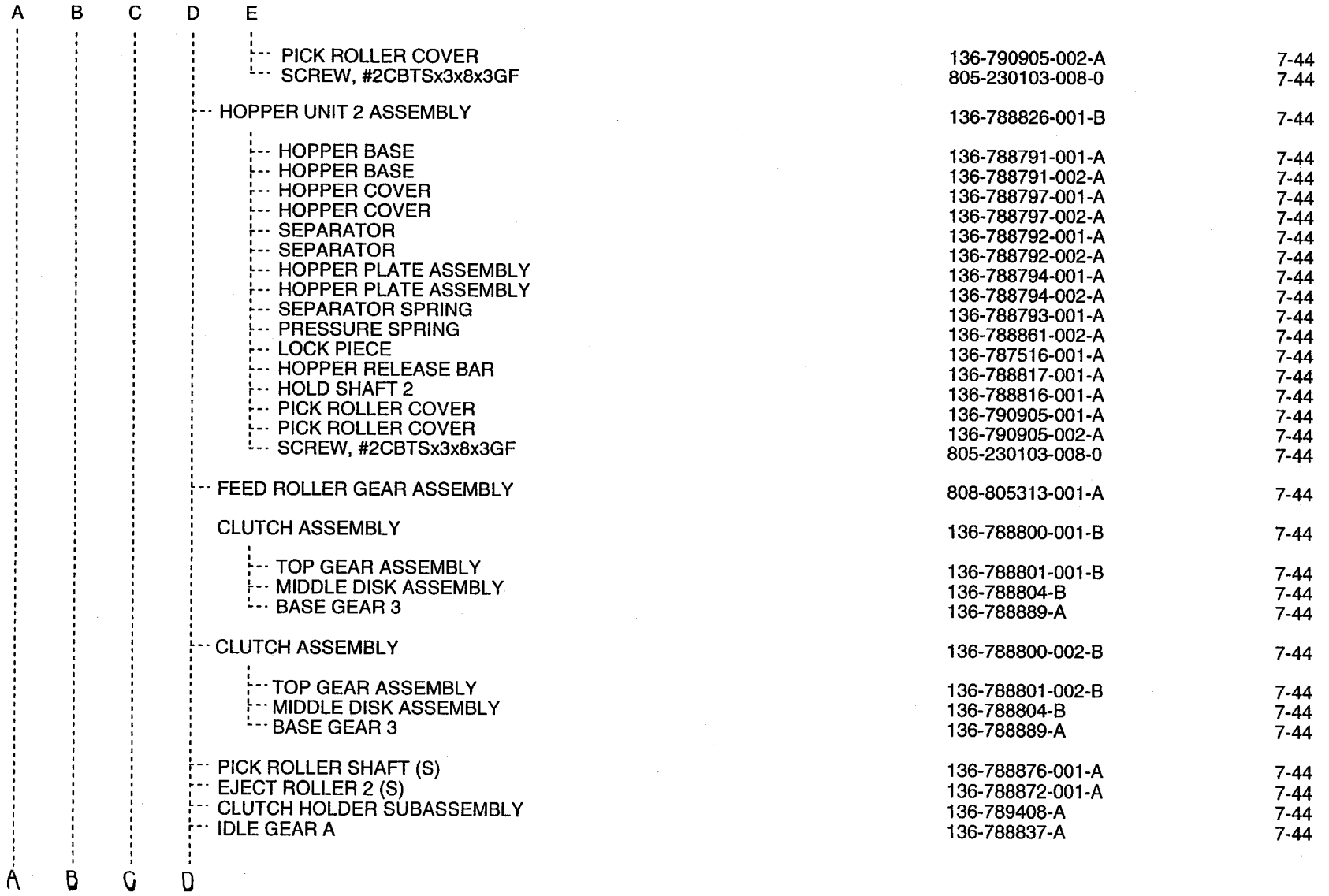

A B C D
PAPER GUIDE 136-788835-A 7-36
CENTER GUIDE 136-788807-001-A 7-36
UPPER STACKER 136-788815-001-A 7-36
HOPPER GUIDE BAR 136-788866-A 7-36
CANOPY (S) SHEET FEEDER 136-846890-001-A 7-4
DUAL BIN SHEET FEEDER 4614 136-009953-401-A 7-4
PSD SHEET FEEDER (S) 2 BIN 136-218949-001-D 7-4
2 BIN MAIN UNIT ASSEMBLY 136-218957-001-D 7-42
2 BIN UNIT SUBASSEMBLY 136-788855-001-C 7-44
SECOND MAIN FRAME ASSEMBLY 136-788810-001-C 7-46
SECOND SIDE FRAME (R) ASSEMBLY 136-788856-001-C 7-46
SECOND SIDE FRAME (L) ASSEMBLY 136-788856-002-C 7-46
MAIN STAY 2 (S) 136-789758-A 7-46
REAR STAY 2 (S) 136-789757-A 7-46
SCREW, PL-CPIMSx3x6x15BF 805-300003-006-0 7-46
SCREW, STCS-CPIMSx3x6x15BF 808-802445-306-A 7-46
SCREW, STCS-CPIMSx3x6x15BF 808-802445-306-A 7-46
FEED ROLLER (S) 136-788892-A 7-46
PRESSURE ROLLER (S) 136-788894-A 7-46
HOLD BUSHING 136-788818-A 7-46
GUIDE BUSHING 136-788907-A 7-46
BACK-UP PIECE 136-788899-001-A 7-46
BACK-UP SPRING II 136-789748-001-A 7-46
GUIDE STAY (S) 136-789762-001-A 7-46
SCREW, PL-CPIMSx3x5x15BF 805-300003-005-0 7-46
MIDDLE GUIDE S ASSEMBLY 136-788871-001-A 7-44
MIDDLE GUIDE (S) 136-788860-001-B 7-44
SIDE GUIDE 136-788849-001-A 7-44
SIDE GUIDE 136-788849-002-A 7-44
A B C D E

Figure 7-2 Family Tree-Pinwriter P62 (11/14)

MIDDLE STAY (S)	136-789760-001-A	7-44
EJECT GUIDE S ASSEMBLY	136-788870-001-B	7-44
EJECT GUIDE (S) SUBASSEMBLY	136-789409-001-B	7-44
STACKER ROLLER (S)	136-788903-A	7-44
BUSHING D	136-788901-001-A	7-44
BUSHING D	136-788901-002-A	7-44
EJECT ROLLER GEAR	136-788843-A	7-44
E RING (E-37)	803-010030-037-0	7-44
BOTTOM STACKER (S) ASSEMBLY	136-788869-001-B	7-44
BOTTOM STACKER (S) SUBASSEMBLY	136-789410-001-B	7-44
FRONT STAY (S)	136-788905-A	7-44
SCREW, #2CBTSx3x6x3GF	805-230103-006-0	7-44
REAR STACKER (S) ASSEMBLY	136-788822-001-A	7-44
REAR STACKER	136-788823-001-A	7-44
E.S.D. BRUSH (S)	136-788824-001-A	7-44
SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	7-44
HOPPER UNIT ASSEMBLY	136-788825-001-B	7-44
HOPPER BASE	136-788791-001-A	7-44
HOPPER BASE	136-788791-002-A	7-44
HOPPER COVER	136-788797-001-A	7-44
HOPPER COVER	136-788797-002-A	7-44
SEPARATOR	136-788792-001-A	7-44
SEPARATOR	136-788792-002-A	7-44
HOPPER PLATE ASSEMBLY	136-788794-001-A	7-44
HOPPER PLATE ASSEMBLY	136-788794-002-A	7-44
SEPARATOR SPRING	136-788793-001-A	7-44
PRESSURE SPRING	136-788861-002-A	7-44
SELECT ARM	136-788798-A	7-44
LOCK PIECE	136-787516-001-A	7-44
HOPPER RELEASE BAR	136-788817-501-A	7-44
HOLD SHAFT	136-788809-501-A	7-44
PICK ROLLER COVER	136-790905-001-A	7-44

Figure 7-2 Family Tree-Pinwriter P62 (12/14)



PICK ROLLER COVER	136-790905-002-A	7-44
SCREW, #2CBTSx3x8x3GF	805-230103-008-0	7-44
HOPPER UNIT 2 ASSEMBLY	136-788826-001-B	7-44
HOPPER BASE	136-788791-001-A	7-44
HOPPER BASE	136-788791-002-A	7-44
HOPPER COVER	136-788797-001-A	7-44
HOPPER COVER	136-788797-002-A	7-44
SEPARATOR	136-788792-001-A	7-44
SEPARATOR	136-788792-002-A	7-44
HOPPER PLATE ASSEMBLY	136-788794-001-A	7-44
HOPPER PLATE ASSEMBLY	136-788794-002-A	7-44
SEPARATOR SPRING	136-788793-001-A	7-44
PRESSURE SPRING	136-788861-002-A	7-44
LOCK PIECE	136-787516-001-A	7-44
HOPPER RELEASE BAR	136-788817-001-A	7-44
HOLD SHAFT 2	136-788816-001-A	7-44
PICK ROLLER COVER	136-790905-001-A	7-44
PICK ROLLER COVER	136-790905-002-A	7-44
SCREW, #2CBTSx3x8x3GF	805-230103-008-0	7-44
FEED ROLLER GEAR ASSEMBLY	808-805313-001-A	7-44
CLUTCH ASSEMBLY	136-788800-001-B	7-44
TOP GEAR ASSEMBLY	136-788801-001-B	7-44
MIDDLE DISK ASSEMBLY	136-788804-B	7-44
BASE GEAR 3	136-788889-A	7-44
CLUTCH ASSEMBLY	136-788800-002-B	7-44
TOP GEAR ASSEMBLY	136-788801-002-B	7-44
MIDDLE DISK ASSEMBLY	136-788804-B	7-44
BASE GEAR 3	136-788889-A	7-44
PICK ROLLER SHAFT (S)	136-788876-001-A	7-44
EJECT ROLLER 2 (S)	136-788872-001-A	7-44
CLUTCH HOLDER SUBASSEMBLY	136-789408-A	7-44
IDLE GEAR A	136-788837-A	7-44

Figure 7-2 Family Tree-Pinwriter P62 (13/14)

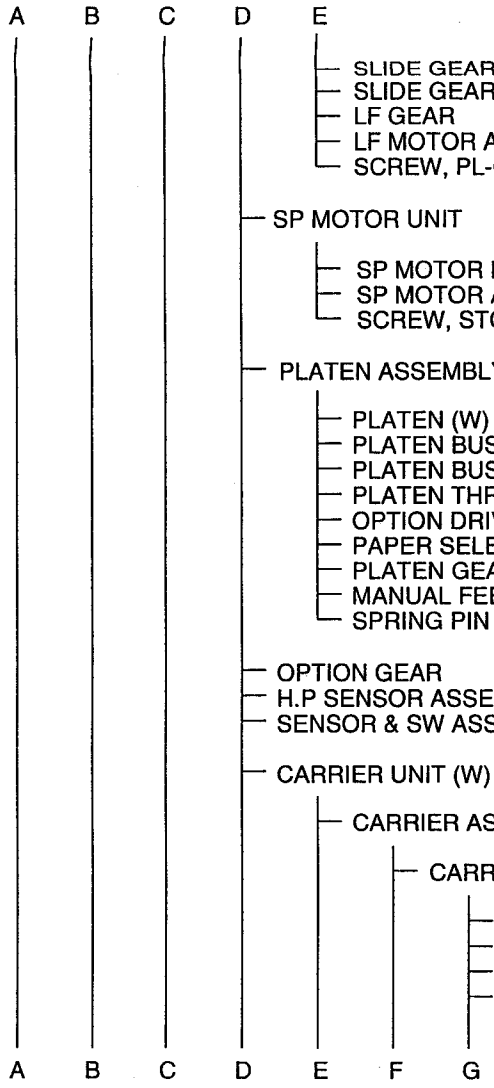
A	B	C	D			
				IDLE GEAR B	136-788838-A	7-44
				IDLE GEAR C	136-788880-A	7-44
				IDLE GEAR D	136-788836-A	7-44
				IDLE GEAR E	136-788910-A	7-44
				IDLE GEAR F	136-788912-A	7-44
				IDLE GEAR J ASSEMBLY	136-789414-B	7-44
				IDLE GEAR H	136-788913-B	7-44
				EJECT ROLLER GEAR	136-788843-A	7-44
				PICK ROLLER GEAR	136-788841-A	7-44
				RELEASE LEVER R	136-788814-001-A	7-44
				RELEASE LEVER L	136-788814-002-A	7-44
				PICK ROLLER	136-788811-001-A	7-44
				PICK ROLLER	136-788811-002-A	7-44
				SELECT LEVER	136-788799-A	7-44
				EJECT SPRING	136-788863-005-A	7-44
				HOLD BUSHING	136-788818-A	7-44
				SECOND SIDE COVER L	136-788886-001-A	7-44
				SECOND SIDE COVER R	136-788887-002-A	7-44
				NUT WASHER	136-789407-A	7-44
				SCREW, PL-CPIMSx3x6x15BF	805-300003-006-0	7-44
				SCREW, SL-CPIMSx3x10x15BF	805-310003-010-0	7-44
				SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	7-44
				SCREW, PL-CPIMSx4x8x15BF	805-300004-008-0	7-44
				E RING (E-32)	803-010030-032-0	7-44
				E RING (E-30)	803-010030-030-0	7-44
				E RING (E-40)	803-010030-040-0	7-44
			STACKER GUIDE ASSEMBLY		136-788828-001-A	7-42
				STACKER GUIDE	136-788834-001-A	7-42
				PAPER GUIDE	136-788835-A	7-42
			CENTER GUIDE		136-788807-001-A	7-42
			UPPER STACKER		136-788815-001-A	7-42
			HOPPER GUIDE BAR		136-788866-A	7-42
		CANOPY (S) SHEET FEEDER			136-846890-001-A	7-4
	COLOR KIT				136-218469-001-A	7-4

Figure 7-2 Family Tree-Pinwriter P62 (14/14)

PART NAME	PART NUMBER	FIG.NO.
PINWRITER P72	136-227693-801-0	7-5
├ PRINTER UNIT(W)	136-227694-801-A	7-5
├ MECHANISM UNIT (W)	136-227695-801-A	7-7
├ FRAME UNIT (W)	136-227696-801-A	7-9
├ FRAME ASSEMBLY (W)	136-218457-501-A	7-11
├ RIGHT SIDE FRAME SUBASSEMBLY	136-846265-001-A	7-13
├ LEFT SIDE FRAME SUBASSEMBLY	136-846265-002-A	7-13
├ MAIN STAY ASSEMBLY (W)	136-218466-501-A	7-13
├ MAIN STAY (W)	136-846337-501-A	7-15
├ REAR PAPER END LEVER	136-846344-001-A	7-15
├ BOTTOM MDL LEVER	136-846345-001-A	7-15
├ ROLLER SUPPORT	136-846339-001-A	7-15
├ ROLLER SUPPORT SPRING	136-846306-001-A	7-15
├ ROLLER SUPPORT BRACKET	136-846338-001-A	7-15
├ RELEASE SHAFT (W)	136-846340-501-A	7-15
├ PRESSURE ROLLER (W)	136-846341-501-A	7-15
├ PRESSURE ROLLER (F)	136-846342-001-A	7-15
├ PRESSURE SPRING	136-846343-001-A	7-15
├ BOTTOM GUIDE ASSEMBLY (W)	136-846277-501-A	7-15
└ SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	7-15
├ FRONT STAY (W)	136-846297-501-A	7-13
├ PAPER GUIDE (W)	136-846286-501-A	7-13
├ WIRE SADDLE WS-1NS	808-811031-001-A	7-13
└ SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	7-13
├ PAPER RELEASE ARM	136-846287-001-A	7-11
├ LF MOTOR UNIT	136-218460-001-A	7-11
└ LF MOTOR FRAME SUBASSEMBLY	136-846276-001-A	7-11

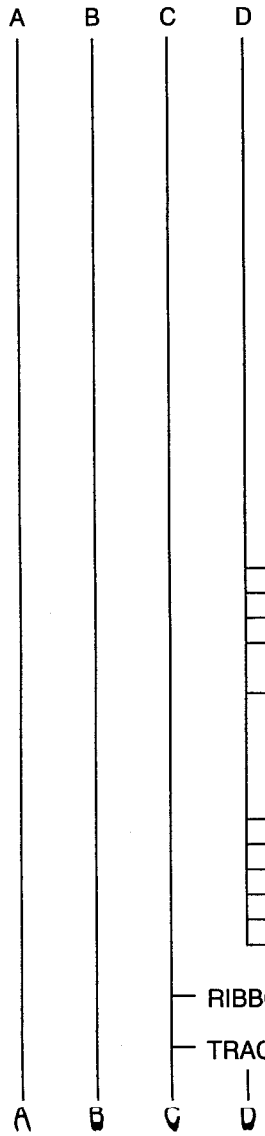
A B C D E

Figure 7-3 Family Tree-Pinwriter P72 (1/13)



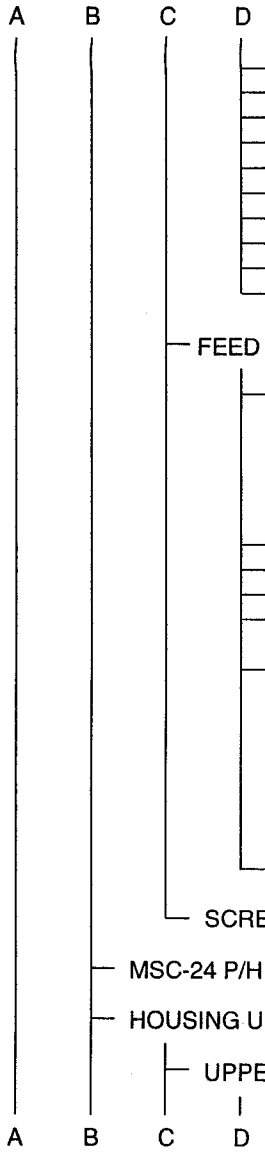
SLIDE GEAR	136-846311-001-A	7-11
SLIDE GEAR SPRING	136-846312-001-A	7-11
LF GEAR	136-846310-001-A	7-11
LF MOTOR ASSEMBLY	808-869546-001-A	7-11
SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	7-11
SP MOTOR UNIT	136-227698-001-A	7-11
SP MOTOR BRACKET	136-870202-001-A	7-11
SP MOTOR ASSEMBLY	808-805369-001-A	7-11
SCREW, STCS-CPIMSx4x10x15BF	808-802445-410-A	7-11
PLATEN ASSEMBLY (W)	136-218461-501-A	7-11
PLATEN (W)	136-846313-501-A	7-17
PLATEN BUSHING (LH)	136-846314-001-A	7-17
PLATEN BUSHING (RH)	136-846314-002-A	7-17
PLATEN THRUST SHIM	136-768495-0	7-17
OPTION DRIVE GEAR	136-846315-001-A	7-17
PAPER SELECTION LEVER	136-846316-001-A	7-17
PLATEN GEAR	136-846317-001-A	7-17
MANUAL FEED GEAR	136-846318-001-A	7-17
SPRING PIN	803-010022-314-0	7-17
OPTION GEAR	136-846288-001-A	7-11
H.P SENSOR ASSEMBLY	808-820754-001-A	7-11
SENSOR & SW ASSEMBLY	808-870197-001-A	7-11
CARRIER UNIT (W)	136-227697-501-A	7-11
CARRIER ASSEMBLY (W)	136-870200-501-A	7-11
CARRIER SUBASSEMBLY (W)	136-870201-501-A	7-18
CARRIER FRAME SUBASSEMBLY	136-846267-001-B	7-18
SLIDE SET PIECE	136-824597-001-B	7-18
CLAMP LEVER (LH)	136-846386-001-A	7-18
CLAMP LEVER (RH)	136-846386-002-A	7-18

Figure 7-3 Family Tree-Pinwriter P72 (2/13)



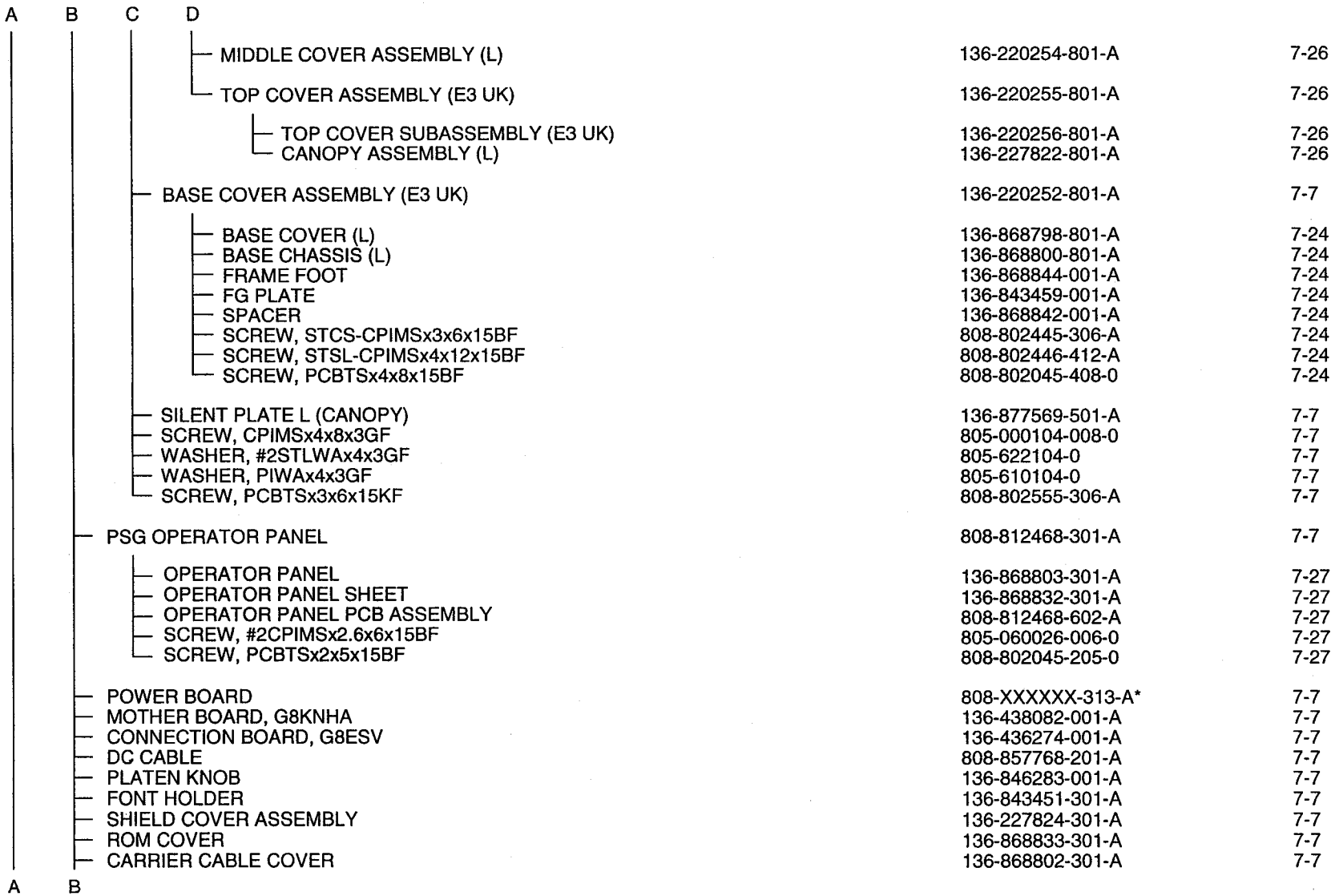
PLANETARIUM GEAR	136-846358-001-A	7-18
PLANETARIUM ARM SUBASSEMBLY	136-854350-001-A	7-18
RIBBON FEED PULLEY	136-846354-001-A	7-18
RIBBON FEED WIRE (W) ASSEMBLY	808-812396-501-A	7-18
PULLEY CASE	136-846385-001-A	7-18
COUNTER GEAR	136-846359-001-A	7-18
RIBBON DRIVE GEAR	136-846360-001-A	7-18
TIMING BELT (W)	808-812393-501-A	7-18
BELT HOLDER	136-846361-001-A	7-18
RIBBON SENSOR ASSEMBLY	808-821266-001-A	7-18
PHOTO SENSOR CLAMP PLATE	136-824599-001-A	7-18
CARRIER FRAME COVER	136-846362-001-A	7-18
CARRIER FG SPRING (LH)	136-870190-001-A	7-18
CARRIER FG SPRING (RH)	136-846367-002-A	7-18
HOLDER SUPPORT	136-854360-001-A	7-18
PIECE (1)	136-846363-001-A	7-18
CARRIER CABLE (W) ASSEMBLY	808-844094-501-A	7-11
GUIDE SHAFT (W)	135-846284-501-A	7-11
ECCENTRIC BUSHING	136-846383-001-A	7-11
GAP ADJUST LEVER	136-870204-001-A	7-11
LEVER SHEET	136-846438-002-A	7-11
TENSION ARM ASSEMBLY	136-846302-001-A	7-11
DRIVEN PULLEY UNIT	136-869024-001-A	7-11
TENSION ARM	136-846370-001-A	7-11
BELT TENSION SPRING	136-846373-001-A	7-11
WIRE TENSION SPRING	136-846356-001-A	7-11
SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	7-11
SCREW, PL-CPIMSx4x10x15BF	808-300004-010-0	7-11
SCREW, STSL-CPIMSx3x8x15BF	808-802446-308-A	7-11
VINYL TWIST-TIE	808-835074-005-A	7-11
RIBBON BASE (BLACK) ASSEMBLY	136-218465-001-A	7-9
TRACTOR UNIT (W)	136-218463-501-A	7-9

Figure 7-3 Family Tree-Pinwriter P72 (3/13)



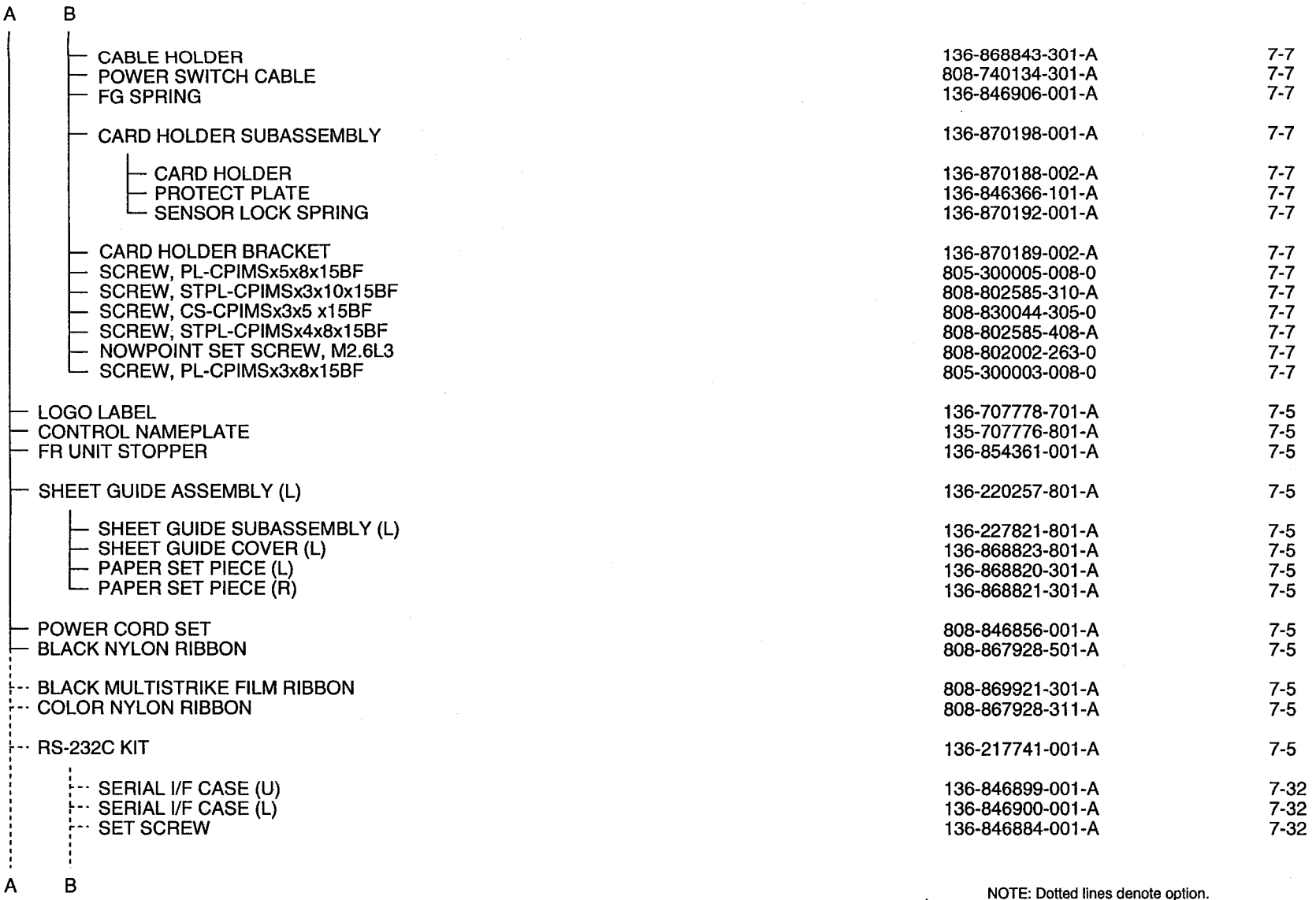
TRACTOR FRAME (W)	136-846319-501-A	7-20
TRACTOR DRIVE SHAFT (W)	136-846320-501-A	7-20
TRACTOR SUPPORT SHAFT(W)	136-846321-501-A	7-20
TRACTOR ASSEMBLY (L)	808-868140-012-A	7-20
TRACTOR ASSEMBLY (R)	808-868140-011-A	7-20
TRACTOR BUSHING (LH)	136-846322-002-A	7-20
TRACTOR BUSHING(RH)	136-846322-001-A	7-20
CENTER GUIDE	136-824533-001-A	7-20
TRACTOR GEAR	136-846323-001-A	7-20
SPECIAL RETAINER	136-854347-001-A	7-20
FEED ROLLER UNIT (W)	136-230164-801-A	7-9
FEED ROLLER FRAME ASSEMBLY(W)	136-846273-501-A	7-22
FEED ROLLER FRAME (W)	136-846331-501-A	7-22
FRICTION MDL LEVER (W)	136-846332-501-A	7-22
MDL LEVER BUSHING	136-846305-001-A	7-22
FEED ROLLER (W)	136-846326-501-A	7-22
FEED ROLLER SHAFT BUSHING	136-846328-001-A	7-22
FEED ROLLER GEAR	136-846329-001-A	7-22
FEED ROLLER COVER ASSEMBLY (W)	136-878775-801-A	7-22
BAIL ROLLER GUIDE ASSEMBLY (W)	136-227825-801-A	7-22
BAIL ROLLER GUIDE (W)	136-846298-501-A	7-22
SUPPORT SHAFT (W)	136-846368-501-A	7-22
FEED ASSIST ROLLER	136-846369-001-A	7-22
PRINT AREA LABEL (L)	136-707779-001-A	7-22
PRINT AREA LABEL (R)	136-707779-002-A	7-22
SPECIAL SCREW	136-846304-001-A	7-22
SCREW, STCS-CPIMSx4x6x15BF	808-802445-406-A	7-9
MSC-24 P/H ASSEMBLY	136-227708-002-A	7-7
HOUSING UNIT (E3 UK)	136-220250-801-A	7-7
UPPER COVER ASSEMBLY (E3 UK)	136-220253-801-A	7-7

Figure 7-3 Family Tree-Pinwriter P72 (4/13)


A B C D
MIDDLE COVER ASSEMBLY (L) 136-220254-801-A 7-26
TOP COVER ASSEMBLY (E3 UK) 136-220255-801-A 7-26
TOP COVER SUBASSEMBLY (E3 UK) 136-220256-801-A 7-26
CANOPY ASSEMBLY (L) 136-227822-801-A 7-26
BASE COVER ASSEMBLY (E3 UK) 136-220252-801-A 7-7
BASE COVER (L) 136-868798-801-A 7-24
BASE CHASSIS (L) 136-868800-801-A 7-24
FRAME FOOT 136-868844-001-A 7-24
FG PLATE 136-843459-001-A 7-24
SPACER 136-868842-001-A 7-24
SCREW, STCS-CPIMSx3x6x15BF 808-802445-306-A 7-24
SCREW, STSL-CPIMSx4x12x15BF 808-802446-412-A 7-24
SCREW, PCBTSx4x8x15BF 808-802045-408-0 7-24
SILENT PLATE L (CANOPY) 136-877569-501-A 7-7
SCREW, CPIMSx4x8x3GF 805-000104-008-0 7-7
WASHER, #2STLWAx4x3GF 805-622104-0 7-7
WASHER, PIWAx4x3GF 805-610104-0 7-7
SCREW, PCBTSx3x6x15KF 808-802555-306-A 7-7
PSG OPERATOR PANEL 808-812468-301-A 7-7
OPERATOR PANEL 136-868803-301-A 7-27
OPERATOR PANEL SHEET 136-868832-301-A 7-27
OPERATOR PANEL PCB ASSEMBLY 808-812468-602-A 7-27
SCREW, #2CPIMSx2.6x6x15BF 805-060026-006-0 7-27
SCREW, PCBTSx2x5x15BF 808-802045-205-0 7-27
POWER BOARD 808-XXXXXX-313-A* 7-7
MOTHER BOARD, G8KNHA 136-438082-001-A 7-7
CONNECTION BOARD, G8ESV 136-436274-001-A 7-7
DC CABLE 808-857768-201-A 7-7
PLATEN KNOB 136-846283-001-A 7-7
FONT HOLDER 136-843451-301-A 7-7
SHIELD COVER ASSEMBLY 136-227824-301-A 7-7
ROM COVER 136-868833-301-A 7-7
CARRIER CABLE COVER 136-868802-301-A 7-7
A B

* 808-891104-313-A PSD POWER (C)
808-891379-313-A PSG-C1 POWER

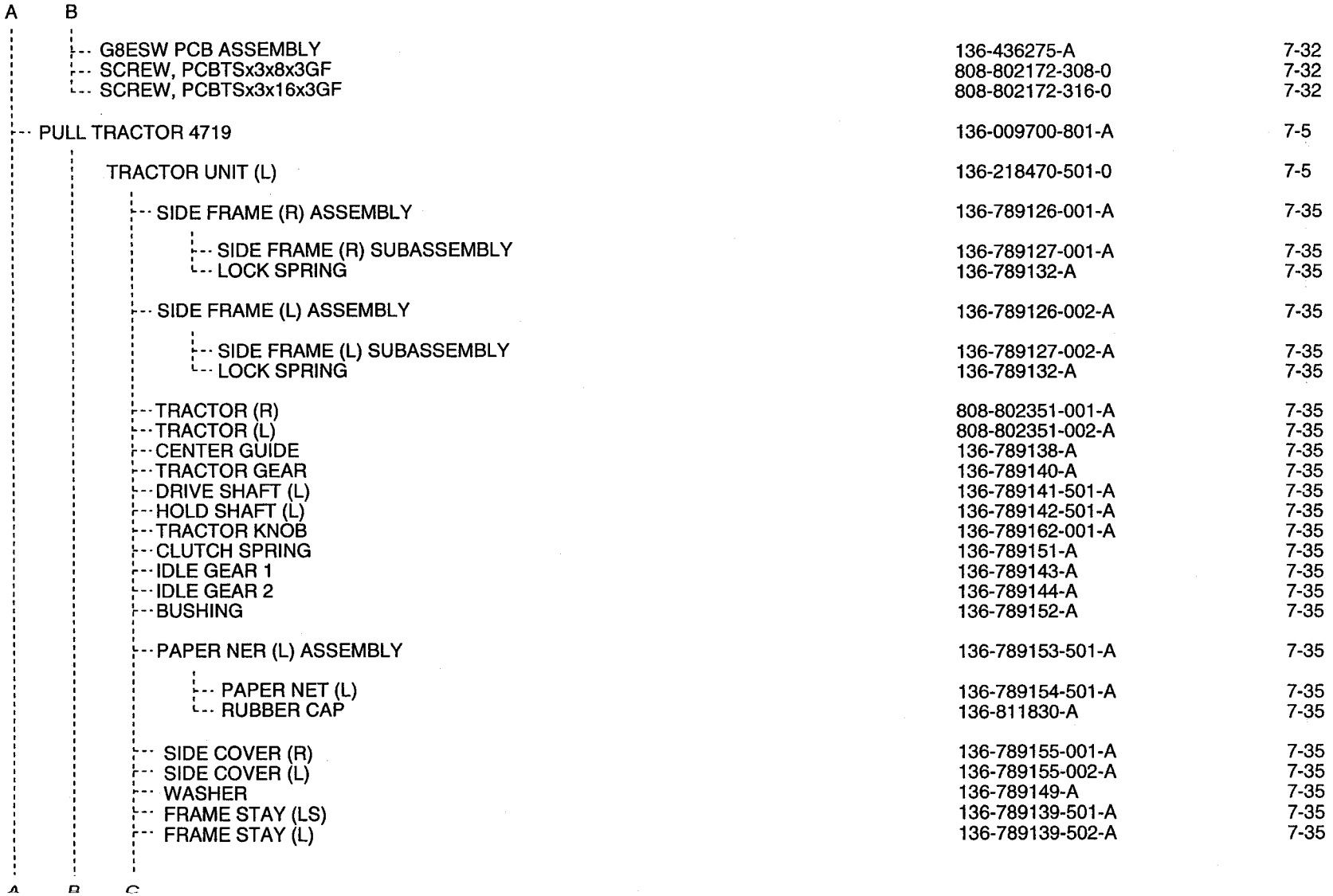
Figure 7-3 Family Tree-Pinwriter P72 (5/13)



CABLE HOLDER	136-868843-301-A	7-7
POWER SWITCH CABLE	808-740134-301-A	7-7
FG SPRING	136-846906-001-A	7-7
CARD HOLDER SUBASSEMBLY	136-870198-001-A	7-7
CARD HOLDER	136-870188-002-A	7-7
PROTECT PLATE	136-846366-101-A	7-7
SENSOR LOCK SPRING	136-870192-001-A	7-7
CARD HOLDER BRACKET	136-870189-002-A	7-7
SCREW, PL-CPIMSx5x8x15BF	805-300005-008-0	7-7
SCREW, STPL-CPIMSx3x10x15BF	808-802585-310-A	7-7
SCREW, CS-CPIMSx3x5 x15BF	808-830044-305-0	7-7
SCREW, STPL-CPIMSx4x8x15BF	808-802585-408-A	7-7
NOWPOINT SET SCREW, M2.6L3	808-802002-263-0	7-7
SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	7-7
LOGO LABEL	136-707778-701-A	7-5
CONTROL NAMEPLATE	135-707776-801-A	7-5
FR UNIT STOPPER	136-854361-001-A	7-5
SHEET GUIDE ASSEMBLY (L)	136-220257-801-A	7-5
SHEET GUIDE SUBASSEMBLY (L)	136-227821-801-A	7-5
SHEET GUIDE COVER (L)	136-868823-801-A	7-5
PAPER SET PIECE (L)	136-868820-301-A	7-5
PAPER SET PIECE (R)	136-868821-301-A	7-5
POWER CORD SET	808-846856-001-A	7-5
BLACK NYLON RIBBON	808-867928-501-A	7-5
BLACK MULTISTRIKE FILM RIBBON	808-869921-301-A	7-5
COLOR NYLON RIBBON	808-867928-311-A	7-5
RS-232C KIT	136-217741-001-A	7-5
SERIAL I/F CASE (U)	136-846899-001-A	7-32
SERIAL I/F CASE (L)	136-846900-001-A	7-32
SET SCREW	136-846884-001-A	7-32

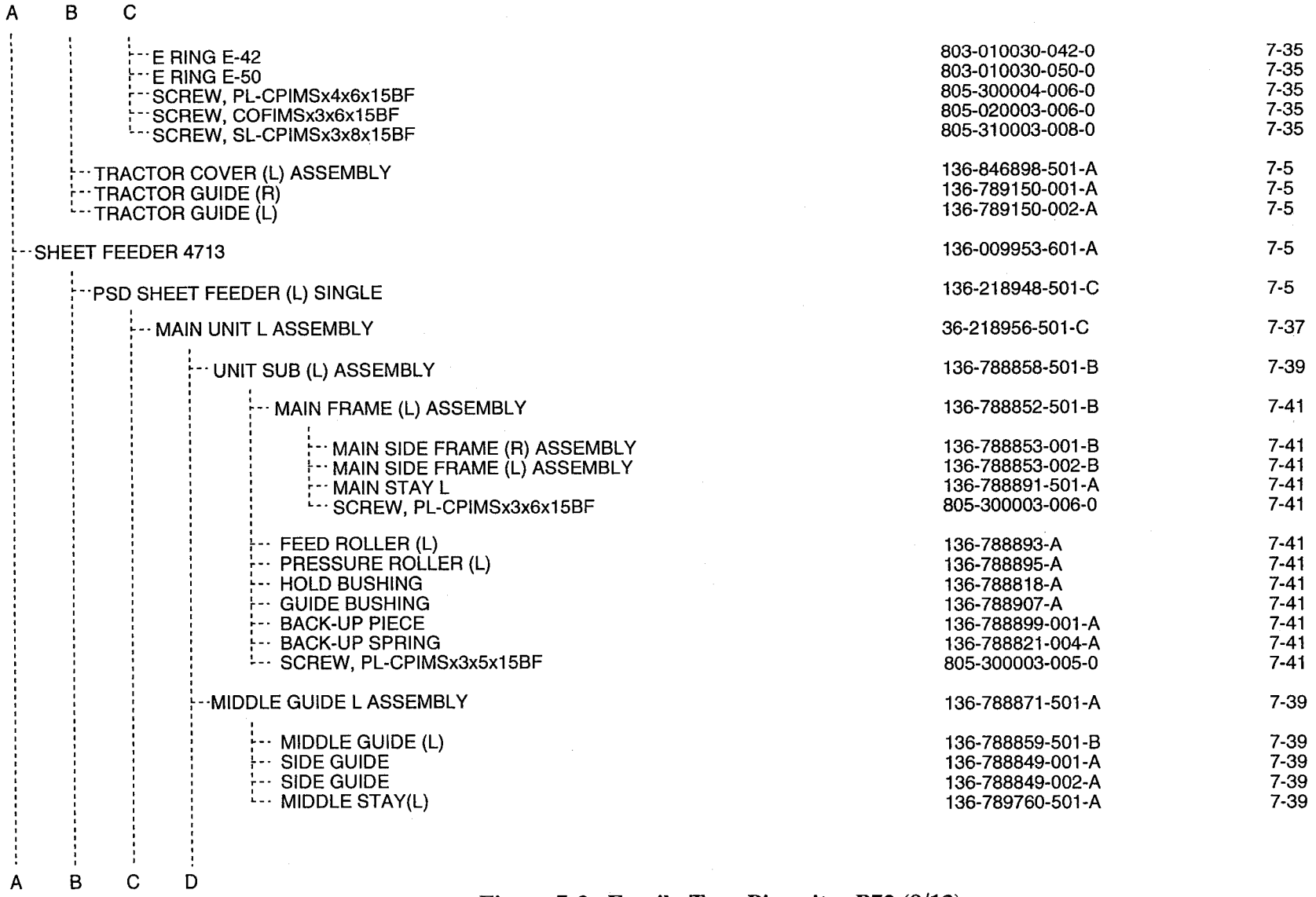
NOTE: Dotted lines denote option.

Figure 7-3 Family Tree-Pinwriter P72 (6/13)



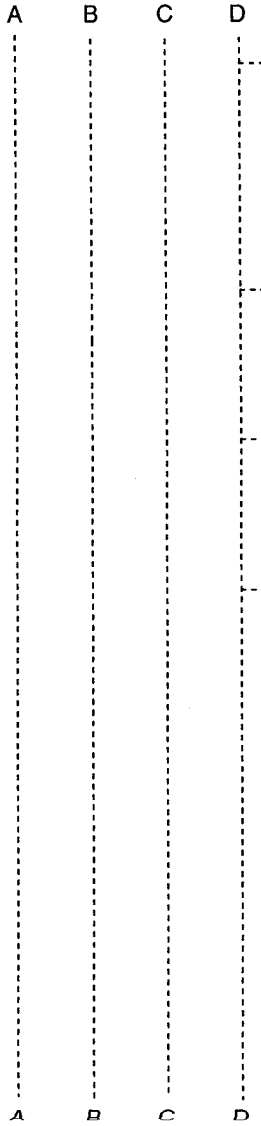
G8ESW PCB ASSEMBLY	136-436275-A	7-32
SCREW, PCBTSx3x8x3GF	808-802172-308-0	7-32
SCREW, PCBTSx3x16x3GF	808-802172-316-0	7-32
PULL TRACTOR 4719	136-009700-801-A	7-5
TRACTOR UNIT (L)	136-218470-501-0	7-5
SIDE FRAME (R) ASSEMBLY	136-789126-001-A	7-35
SIDE FRAME (R) SUBASSEMBLY	136-789127-001-A	7-35
LOCK SPRING	136-789132-A	7-35
SIDE FRAME (L) ASSEMBLY	136-789126-002-A	7-35
SIDE FRAME (L) SUBASSEMBLY	136-789127-002-A	7-35
LOCK SPRING	136-789132-A	7-35
TRACTOR (R)	808-802351-001-A	7-35
TRACTOR (L)	808-802351-002-A	7-35
CENTER GUIDE	136-789138-A	7-35
TRACTOR GEAR	136-789140-A	7-35
DRIVE SHAFT (L)	136-789141-501-A	7-35
HOLD SHAFT (L)	136-789142-501-A	7-35
TRACTOR KNOB	136-789162-001-A	7-35
CLUTCH SPRING	136-789151-A	7-35
IDLE GEAR 1	136-789143-A	7-35
IDLE GEAR 2	136-789144-A	7-35
BUSHING	136-789152-A	7-35
PAPER NER (L) ASSEMBLY	136-789153-501-A	7-35
PAPER NET (L)	136-789154-501-A	7-35
RUBBER CAP	136-811830-A	7-35
SIDE COVER (R)	136-789155-001-A	7-35
SIDE COVER (L)	136-789155-002-A	7-35
WASHER	136-789149-A	7-35
FRAME STAY (LS)	136-789139-501-A	7-35
FRAME STAY (L)	136-789139-502-A	7-35

Figure 7-3 Family Tree-Pinwriter P72 (7/13)



E RING E-42	803-010030-042-0	7-35
E RING E-50	803-010030-050-0	7-35
SCREW, PL-CPIMSx4x6x15BF	805-300004-006-0	7-35
SCREW, COFIMSx3x6x15BF	805-020003-006-0	7-35
SCREW, SL-CPIMSx3x8x15BF	805-310003-008-0	7-35
TRACTOR COVER (L) ASSEMBLY	136-846898-501-A	7-5
TRACTOR GUIDE (R)	136-789150-001-A	7-5
TRACTOR GUIDE (L)	136-789150-002-A	7-5
SHEET FEEDER 4713	136-009953-601-A	7-5
PSD SHEET FEEDER (L) SINGLE	136-218948-501-C	7-5
MAIN UNIT L ASSEMBLY	36-218956-501-C	7-37
UNIT SUB (L) ASSEMBLY	136-788858-501-B	7-39
MAIN FRAME (L) ASSEMBLY	136-788852-501-B	7-41
MAIN SIDE FRAME (R) ASSEMBLY	136-788853-001-B	7-41
MAIN SIDE FRAME (L) ASSEMBLY	136-788853-002-B	7-41
MAIN STAY L	136-788891-501-A	7-41
SCREW, PL-CPIMSx3x6x15BF	805-300003-006-0	7-41
FEED ROLLER (L)	136-788893-A	7-41
PRESSURE ROLLER (L)	136-788895-A	7-41
HOLD BUSHING	136-788818-A	7-41
GUIDE BUSHING	136-788907-A	7-41
BACK-UP PIECE	136-788899-001-A	7-41
BACK-UP SPRING	136-788821-004-A	7-41
SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	7-41
MIDDLE GUIDE L ASSEMBLY	136-788871-501-A	7-39
MIDDLE GUIDE (L)	136-788859-501-B	7-39
SIDE GUIDE	136-788849-001-A	7-39
SIDE GUIDE	136-788849-002-A	7-39
MIDDLE STAY(L)	136-789760-501-A	7-39

Figure 7-3 Family Tree-Pinwriter P72 (8/13)



EJECT GUIDE L ASSEMBLY	136-788870-501-B	7-39
EJECT GUIDE (L) SUBASSEMBLY	136-789409-501-B	7-39
STACKER ROLLER (L)	136-788902-A	7-39
BUSHING D	136-788901-001-A	7-39
BUSHING D	136-788901-002-A	7-39
EJECT ROLLER GEAR	136-788843-A	7-39
E RING (E-37)	803-010030-037-A	7-39
BOTTOM STACKER L ASSEMBLY	136-788869-501-B	7-39
BOTTOM STACKER (L) SUBASSEMBLY	136-789410-501-B	7-39
FRONT STAY L	136-788904-A	7-39
SCREW, #2CBTSx3x6x3GF	805-230103-006-0	7-39
REAR STACKER (L) ASSEMBLY	136-788822-501-A	7-39
REAR STACKER	136-788823-501-A	7-39
E.S.D BRUSH	136-788824-501-A	7-39
SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	7-39
HOPPER UNIT ASSEMBLY	136-788825-501-B	7-39
HOPPER BASE	136-788791-001-A	7-39
HOPPER BASE	136-788791-002-A	7-39
HOPPER COVER	136-788797-001-A	7-39
HOPPER COVER	136-788797-002-A	7-39
SEPARATOR	136-788792-001-A	7-39
SEPARATOR	136-788792-002-A	7-39
HOPPER PLATE ASSEMBLY	136-788794-001-A	7-39
HOPPER PLATE ASSEMBLY	136-788794-002-A	7-39
SEPARATOR SPRING	136-788793-001-A	7-39
PRESSURE SPRING	136-788861-002-A	7-39
SELECT ARM	136-788798-A	7-39
LOCK PIECE	136-787516-001-A	7-39
HOPPER RELEASE BAR	136-788817-501-A	7-39
HOLD SHAFT	136-788809-501-A	7-39
PICK ROLLER COVER	136-790905-001-A	7-39
PICK ROLLER COVER	36-790905-002-A	7-39
SCREW, #2CBTSx3x8x3GF	805-230103-008-0	7-39

Figure 7-3 Family Tree-Pinwriter P72 (9/13)

FEED ROLLER GEAR ASSEMBLY	808-805313-001-A	7-39
CLUTCH ASSEMBLY	136-788800-001-B	7-39
TOP GEAR ASSEMBLY	136-788801-001-B	7-39
MIDDLE DISK ASSEMBLY	136-788804-B	7-39
BASE GEAR 3	136-788889-A	7-39
PICK ROLLER SHAFT	136-788876-501-A	7-39
EJECT ROLLER 2 (L)	136-788872-501-A	7-39
CLUTCH HOLDER SUBASSEMBLY	136-789408-A	7-39
IDLE GEAR A	136-788837-A	7-39
IDLE GEAR B	136-788838-A	7-39
IDLE GEAR C	136-788880-A	7-39
IDLE GEAR D	136-788836-A	7-39
IDLE GEAR E	136-788910-A	7-39
IDLE GEAR F	136-788912-A	7-39
IDLE GEAR G	136-788911-A	7-39
EJECT ROLLER GEAR	136-788843-A	7-39
PICK ROLLER GEAR	136-788841-A	7-39
RELEASE LEVER	136-788814-001-A	7-39
RELEASE LEVER	136-788814-002-A	7-39
PICK ROLLER	136-788811-001-A	7-39
PICK ROLLER	136-788811-002-A	7-39
SELECT LEVER	136-788799-A	7-39
EJECT SPRING	136-788863-005-A	7-39
HOLD BUSHING	136-788818-A	7-39
SIDE COVER (L)	136-788884-001-A	7-39
SIDE COVER (R)	136-788885-002-A	7-39
NUT WASHER	136-789407-A	7-39
SCREW, PL-CPIMSx3x6x15BF	805-300003-006-0	7-39
SCREW, SL-CPIMSx3x10x15BF	805-310003-010-0	7-39
SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	7-39
E RING (E-32)	803-010030-032-0	7-39
E RING (E-40)	803-010030-040-0	7-39
STACKER GUIDE ASSEMBLY	136-788828-001-A	7-37
STACKER GUIDE	136-788834-001-A	7-37

Figure 7-3 Family Tree-Pinwriter P72 (10/13)

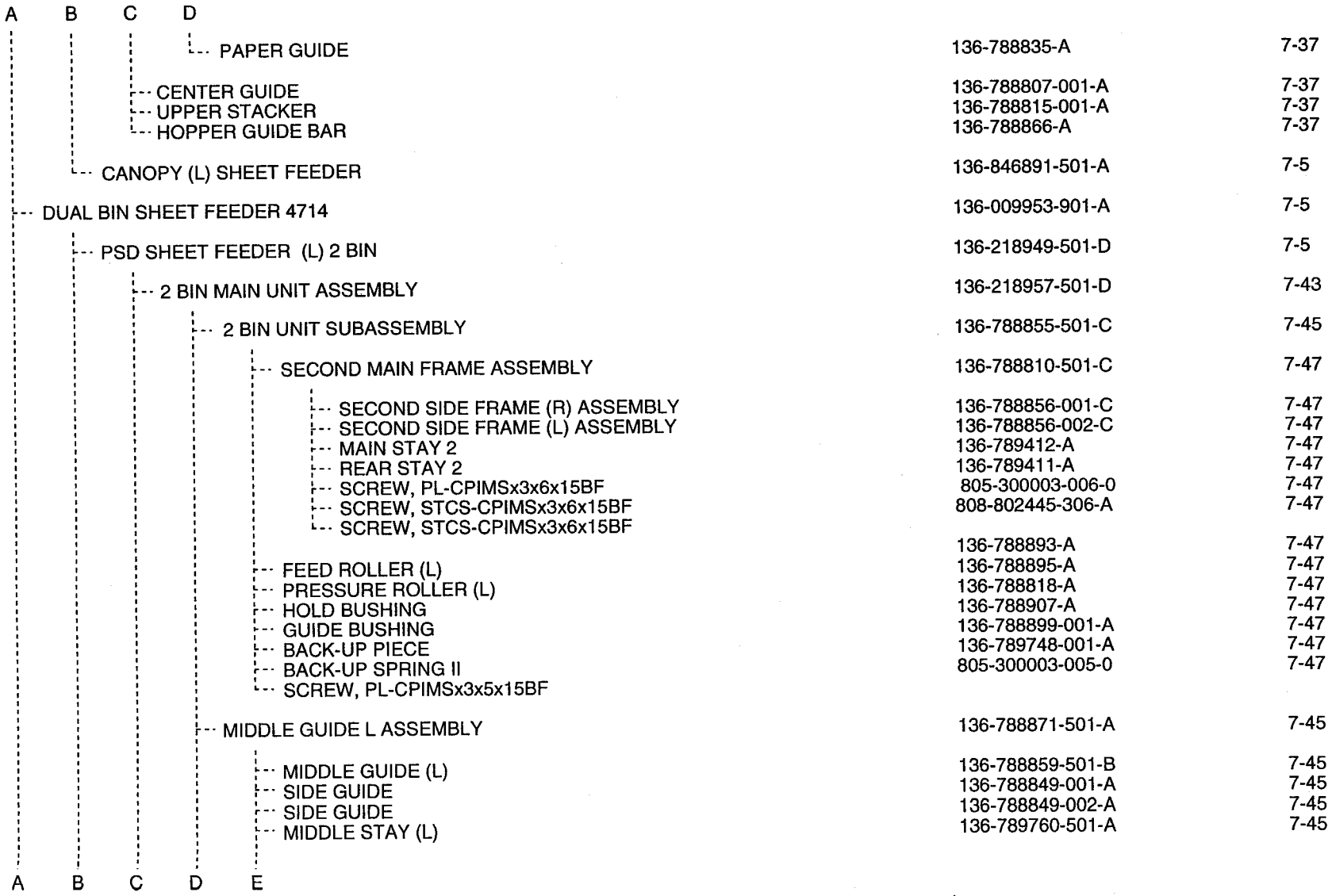

A B C D
PAPER GUIDE 136-788835-A 7-37
CENTER GUIDE 136-788807-001-A 7-37
UPPER STACKER 136-788815-001-A 7-37
HOPPER GUIDE BAR 136-788866-A 7-37
CANOPY (L) SHEET FEEDER 136-846891-501-A 7-5
DUAL BIN SHEET FEEDER 4714 136-009953-901-A 7-5
PSD SHEET FEEDER (L) 2 BIN 136-218949-501-D 7-5
2 BIN MAIN UNIT ASSEMBLY 136-218957-501-D 7-43
2 BIN UNIT SUBASSEMBLY 136-788855-501-C 7-45
SECOND MAIN FRAME ASSEMBLY 136-788810-501-C 7-47
SECOND SIDE FRAME (R) ASSEMBLY 136-788856-001-C 7-47
SECOND SIDE FRAME (L) ASSEMBLY 136-788856-002-C 7-47
MAIN STAY 2 136-789412-A 7-47
REAR STAY 2 136-789411-A 7-47
SCREW, PL-CPIMSx3x6x15BF 805-300003-006-0 7-47
SCREW, STCS-CPIMSx3x6x15BF 808-802445-306-A 7-47
SCREW, STCS-CPIMSx3x6x15BF 136-788893-A 7-47
FEED ROLLER (L) 136-788895-A 7-47
PRESSURE ROLLER (L) 136-788818-A 7-47
HOLD BUSHING 136-788907-A 7-47
GUIDE BUSHING 136-788899-001-A 7-47
BACK-UP PIECE 136-789748-001-A 7-47
BACK-UP SPRING II 805-300003-005-0 7-47
SCREW, PL-CPIMSx3x5x15BF
MIDDLE GUIDE L ASSEMBLY 136-788871-501-A 7-45
MIDDLE GUIDE (L) 136-788859-501-B 7-45
SIDE GUIDE 136-788849-001-A 7-45
SIDE GUIDE 136-788849-002-A 7-45
MIDDLE STAY (L) 136-789760-501-A 7-45
A B C D E

Figure 7-3 Family Tree-Prinwriter P72 (11/13)

EJECT GUIDE L ASSEMBLY	136-788870-501-B	7-45
EJECT GUIDE (L) SUBASSEMBLY	136-789409-501-B	7-45
STACKER ROLLER (L)	136-788902-A	7-45
BUSHING D	136-788901-001-A	7-45
BUSHING D	136-788901-002-A	7-45
EJECT ROLLER GEAR	136-788843-A	7-45
E RING (E-37)	803-010030-037-0	7-45
BOTTOM STACKER (L) ASSEMBLY	136-788869-501-B	7-45
BOTTOM STACKER (L) SUBASSEMBLY	136-789410-501-B	7-45
FRONT STAY (L)	136-788904-A	7-45
SCREW, #2CBTSx3x6x3GF	805-230103-006-0	7-45
REAR STACKER (L) ASSEMBLY	136-788822-501-A	7-45
REAR STACKER	136-788823-501-A	7-45
E.S.D. BRUSH (L)	136-788824-501-A	7-45
SCREW, PL-CPIMSx3x5x15BF	805-300003-005-0	7-45
HOPPER UNIT ASSEMBLY	136-788825-501-B	7-45
HOPPER BASE	136-788791-001-A	7-45
HOPPER BASE	136-788791-002-A	7-45
HOPPER COVER	136-788797-001-A	7-45
HOPPER COVER	136-788797-002-A	7-45
SEPARATOR	136-788792-001-A	7-45
SEPARATOR	136-788792-002-A	7-45
HOPPER PLATE ASSEMBLY	136-788794-001-A	7-45
HOPPER PLATE ASSEMBLY	136-788794-002-A	7-45
SEPARATOR SPRING	136-788793-001-A	7-45
PRESSURE SPRING	136-788861-002-A	7-45
SELECT ARM	136-788798-A	7-45
LOCK PIECE	136-787516-001-A	7-45
HOPPER RELEASE BAR	136-788817-501-A	7-45
HOLD SHAFT	136-788809-501-A	7-45
PICK ROLLER COVER	136-790905-001-A	7-45
PICK ROLLER COVER	136-790905-002-A	7-45
SREW, #2CBTSx3x8x3GF	805-230103-008-0	7-45

Figure 7-3 Family Tree-Pinwriter P72 (12/13)

A B C D

HOPPER UNIT 2 ASSEMBLY	136-788826-501-B	7-45
HOPPER BASE	136-788791-001-A	7-45
HOPPER BASE	136-788791-002-A	7-45
HOPPER COVER	136-788797-001-A	7-45
HOPPER COVER	136-788797-002-A	7-45
SEPARATOR	136-788792-001-A	7-45
SEPARATOR	136-788792-002-A	7-45
HOPPER PLATE ASSEMBLY	136-788794-001-A	7-45
HOPPER PLATE ASSEMBLY	136-788794-002-A	7-45
SEPARATOR SPRING	136-788793-001-A	7-45
PRESSURE SPRING	136-788861-002-A	7-45
LOCK PIECE	136-787516-001-A	7-45
HOPPER RELEASE BAR	136-788817-001-A	7-45
HOLD SHAFT 2	136-788816-001-A	7-45
PICK ROLLER COVER	136-790905-001-A	7-45
PICK ROLLER COVER	136-790905-002-A	7-45
SCREW, #2CBTSx3x8x3GF	805-230103-008-0	7-45
FEED ROLLER GEAR ASSEMBLY	808-805313-001-A	7-45
CLUTCH ASSEMBLY	136-788800-001-B	7-45
TOP GEAR ASSEMBLY	136-788801-001-B	7-45
MIDDLE DISK ASSEMBLY	136-788804-B	7-45
BASE GEAR 3	136-788889-A	7-45
CLUTCH ASSEMBLY	136-788800-002-B	7-45
TOP GEAR ASSEMBLY	136-788801-002-B	7-45
MIDDLE DISK ASSEMBLY	136-788804-B	7-45
BASE GEAR 3	136-788889-A	7-45
PICK ROLLER SHAFT (L)	136-788876-501-A	7-45
EJECT ROLLER 2 (L)	136-788872-501-A	7-45
CLUTCH HOLDER SUBASSEMBLY	136-789408-A	7-45
IDLE GEAR A	136-788837-A	7-45
IDLE GEAR B	136-788838-A	7-45
IDLE GEAR C	136-788880-A	7-45
IDLE GEAR D	136-788836-A	7-45
IDLE GEAR E	136-788910-A	7-45
IDLE GEAR F	136-788912-A	7-45
IDLE GEAR J ASSEMBLY	136-789414-B	7-45
IDLE GEAR H	136-788913-B	7-45
EJECT ROLLER GEAR	136-788843-A	7-45
PICK ROLLER GEAR	136-788841-A	7-45
RELEASE LEVER R	136-788814-001-A	7-45
RELEASE LEVER L	136-788814-002-A	7-45
PICK ROLLER	136-788811-001-A	7-45
PICK ROLLER	136-788811-002-A	7-45
SELECT LEVER	136-788799-A	7-45
EJECT SPRING	136-788863-005-A	7-45
HOLD BUSHING	136-788818-A	7-45
SECOND SIDE COVER L	136-788886-001-A	7-45
SECOND SIDE COVER R	136-788887-002-A	7-45
NUT WASHER	136-789407-A	7-45
SCREW, PL-CPIMSx3x6x15BF	805-300003-006-0	7-45
SCREW, SL-CPIMSx3x10x15BF	805-310003-010-0	7-45
SCREW, PL-CPIMSx3x8x15BF	805-300003-008-0	7-45
SCREW, PL-CPIMSx4x8x15BF	805-300004-008-0	7-45
E RING (E-32)	803-010030-032-0	7-45
E RING (E-30)	803-010030-030-0	7-45
E RING (E-40)	803-010030-040-0	7-45
STACKER GUIDE ASSEMBLY	136-788828-001-A	7-43
STACKER GUIDE	136-788834-001-A	7-43
PAPER GUIDE	136-788835-A	7-43
CENTER GUIDE	136-788807-001-A	7-43
UPPER STACKER	136-788815-001-A	7-43
HOPPER GUIDE BAR	136-788866-A	7-43
CANOPY (L) SHEET FEEDER	136-846891-501-A	7-5
COLOR KIT	136-218469-001-A	7-5

Figure 7-3 Family Tree-Pinwriter P72 (13/13)

Pinwriter P62 Major Assembly (146-227693-301-0)

ITEM	PART NAME	PART NUMBER	Q'TY*
1	Printer Unit (N) (See Figure 7-6 for breakdown)	136-227694-301-A*	1
2	Logo Label	136-707778-201-A	1
3	Control Nameplate	135-707776-301-A*	1
4	FR Unit Stopper	136-854361-001-A	1
5	Sheet Guide Assembly (S)	136-220257-301-A	1
5-1	Sheet Guide Subassembly (S)	136-227821-301-A*	1
5-2	Sheet Guide Cover (S)	136-868822-301-A	1
5-3	Paper Set Piece (L)	136-868820-301-A	1
5-4	Paper Set Piece (R)	136-868821-301-A	1
6	Power Cord Set	808-846856-001-A*	1
7	Black Nylon Ribbon	808-867928-501-A*	1
Optional Parts:			
8	Black Multistrike Film Ribbon	808-869921-301-A*	1
9	Color Nylon Ribbon	808-867928-311-A*	1
10	RS-232C Kit (See Figure 7-32 for breakdown)	136-217741-001-A*	1
11	Pull Tractor 4619	136-009700-301-A	1
11-1	Tractor Unit (S) (See Figure 7-34 for breakdown)	136-218470-001-0*	1
11-2	Tractor Cover (S) Assembly	136-846898-001-A	1
11-3	Tractor Guide (R)	136-789150-001-A	1
11-4	Tractor Guide (L)	136-789150-002-A	1
12	Sheet Feender 4613	136-009953-301-A	1
12-1	PSD Sheet Feeder (S) Single (See Figure 7-36 for breakdown)	136-218948-001-C*	1
12-2	Canopy (S) Sheet Feeder	136-846890-001-A	1
13	Dual Bin Sheet Feeder 4614	136-009953-401-A	1
13-1	PSD Sheet Feeder (S) 2 Bin (See Figure 7-42 for breakdown)	136-218949-001-D	1
13-2	Canopy (S) Sheet Feeder	136-846890-001-A	1
14	Color Kit	136-218469-001-A*	1

* Not available as a spare part.

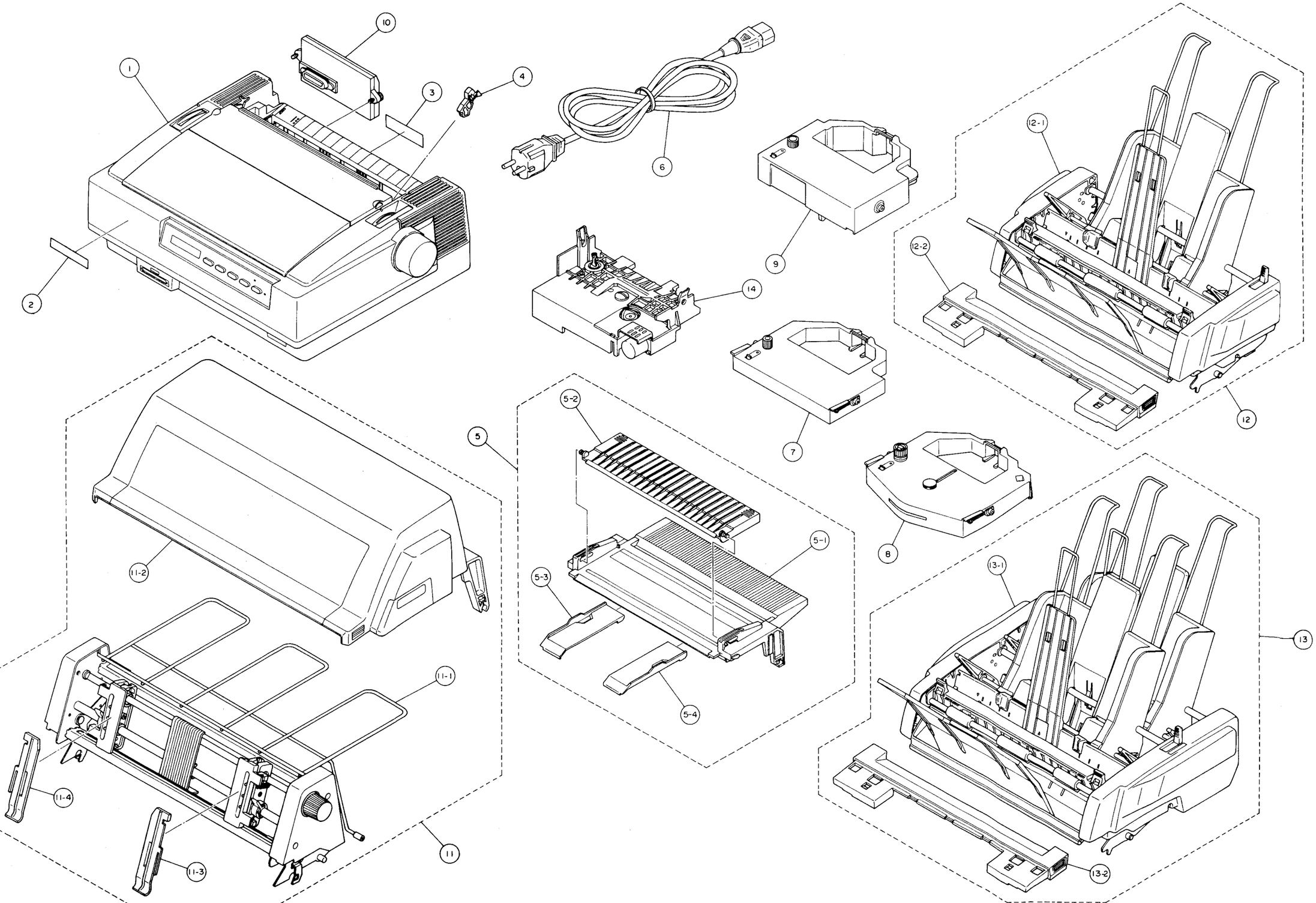
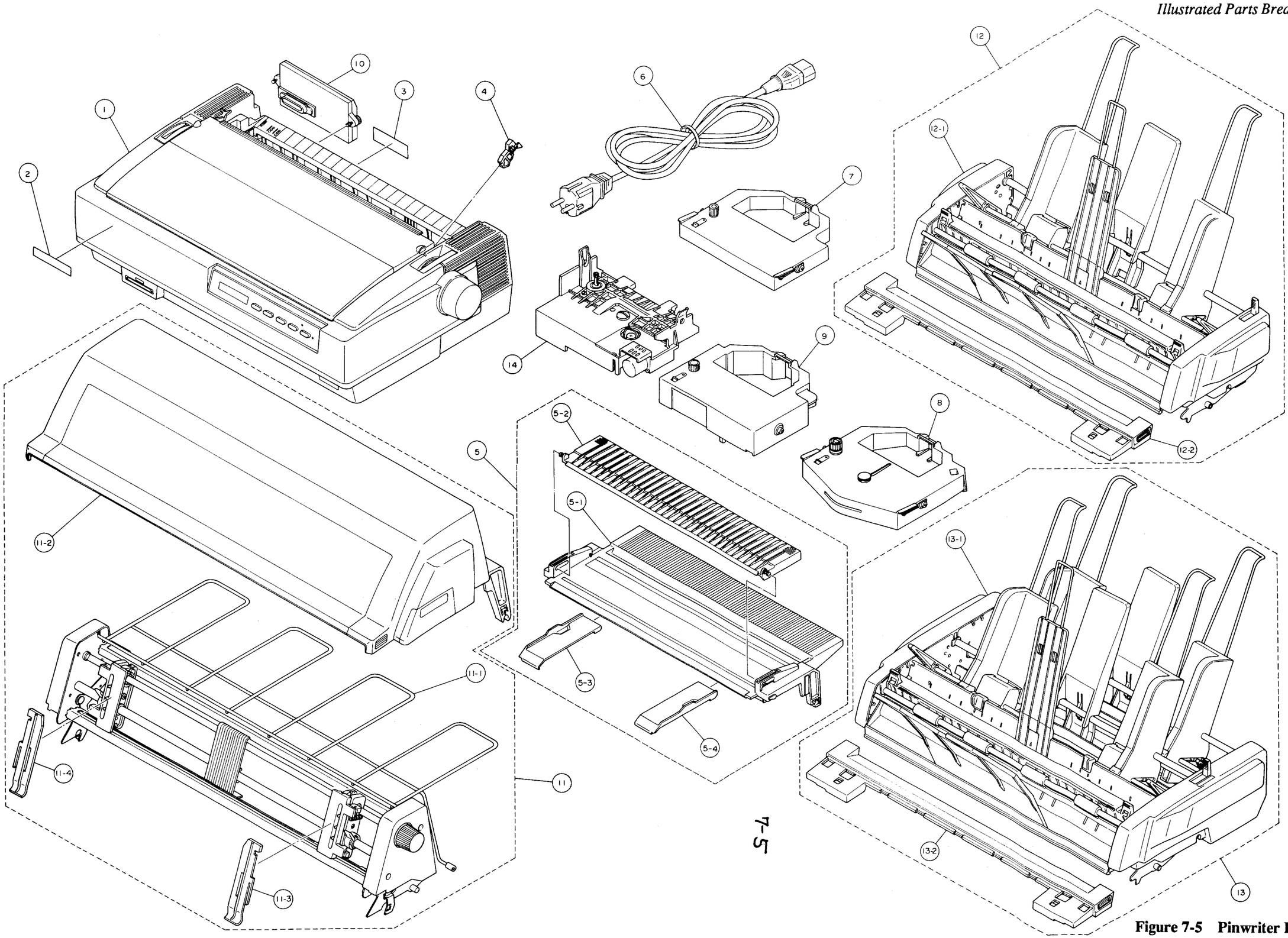


Figure 7-4 Pinwriter P6

Pinwriter P72 Major Assembly (136-227693-801-0)

ITEM	PART NAME	PART NUMBER	Q'TY*
1	Printer Unit (W) (See Figure 7-7 for breakdown)	136-227694-801-A*	1
2	Logo Label	136-707778-701-A	1
3	Control Nameplate	135-707776-801-A*	1
4	FR Unit Stopper	136-854361-001-A	1
5	Sheet Guide Assembly (L)	136-220257-801-A	1
5-1	Sheet Guide Subassembly (L)	136-227821-801-A*	1
5-2	Sheet Guide Cover (L)	136-868823-801-A	1
5-3	Paper Set Piece (L)	136-868820-301-A	1
5-4	Paper Set Piece (R)	136-868821-301-A	1
6	Power Cord Set	808-846856-001-A*	1
7	Black Nylon Ribbon	808-867928-501-A*	1
Optional Parts:			
8	Black Multistrike Film Ribbon	808-869921-301-A*	1
9	Color Nylon Ribbon	808-867928-311-A*	1
10	RS-232C Kit (See Figure 7-32 for breakdown)	136-217741-001-A*	1
11	Pull Tractor 4719	136-009700-801-A	1
11-1	Tractor Unit (L) (See Figure 7-35 for breakdown)	136-218470-501-0*	1
11-2	Tractor Cover (L) Assembly	136-846898-501-A	1
11-3	Tractor Guide (R)	136-789150-001-A	1
11-4	Tractor Guide (L)	136-789150-002-A	1
12	Sheet Feender 4713	136-009953-601-A	1
12-1	PSD Sheet Feeder (L) Single (See Figure 7-37 for breakdown)	136-218948-501-C*	1
12-2	Canopy (L) Sheet Feeder	136-846891-501-A	1
13	Dual Bin Sheet Feeder 4714	136-009953-901-A	1
13-1	PSD Sheet Feeder (L) 2 Bin (See Figure 7-43 for breakdown)	136-218949-501-D*	1
13-2	Canopy (L) Sheet Feeder	136-846891-501-A	1
14	Color Kit	136-218469-001-A*	1

* Not available as a spare part.



7-5

Figure 7-5 Pinwriter P72

Printer Unit (N) (136-227694-301-A)

ITEM	PART NAME	PART NUMBER	Q'TY*
1	Mechanism Unit (N) (See Figure 7-8 for breakdown)	136-227695-301-A*	1
2	MSC-24 P/H Assembly	136-227708-002-A	1
3	Housing Unit (E2 UK)	136-220250-301-A*	1
3-1	Upper Cover Assembly (E2 UK) (See Figure 7-25 for breakdown)	136-220253-301-A	—
3-2	Base Cover Assembly (E2 UK) (See Figure 7-23 for breakdown)	136-220252-301-A	1
3-201	Screw, CPIMSx4x8x3GF	805-000104-008-0*	1
3-202	Washer, #2STLWAx4x3GF	805-622104-0*	1
3-203	Washer, PIWAx4x3GF	805-610104-0*	1
4	PSG Operator Panel (See Figure 7-27 for breakdown)	808-812468-301-A	1
5	Power Board (See Figures 7-28 and 6-29 for breakdown)	808-xxxxxx-313-A**	1
6	Mother Board, G8KNHA (See Figure 7-30 for breakdown)	136-438082-001-A	1
7	Connection Board, G8ESV (See Figure 7-31 for breakdown)	136-436274-001-A	1
8	DC Cable	808-857768-101-A	1
9	Platen Knob	136-846283-001-A	1
10	Font Holder	136-843451-301-A	1
11	Shield Cover Assembly	136-227824-301-A*	1
12	ROM Cover	136-868833-301-A*	1
13	Carrier Cable Cover	136-868802-301-A	1
14	Cable Holder	136-868843-301-A*	1
15	Power Switch Cable	808-740134-301-A	1
16	FG Spring	136-846906-001-A	1
17	Card Holder Subassembly	136-870198-001-A	1
17-1	Card Holder	136-870188-002-A*	1
17-2	Protect Plate	136-846366-101-A*	1
17-3	Sensor Lock Spring	136-870192-001-A*	1
18	Card Holder Bracket	136-870189-002-A	1
201	Screw, PL-CPIMSx5x8x15BF	805-300005-008-0*	4
202	Screw, STPL-CPIMSx3x10x15BF	808-802585-310-A*	23
203	Screw, CS-CPIMSx3x5x15BF	808-830044-305-0*	4
204	Screw, STPL-CPIMSx4x8x15BF	808-802585-408-A*	1
205	Nowpoint Set Screw, M2. 6L3	808-802002-263-0*	2
206	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0*	1

* Not available as a spare part.

** 808-891104-313-A: PSD POWER (C)
808-891379-313-A: PSG-C1 POWER

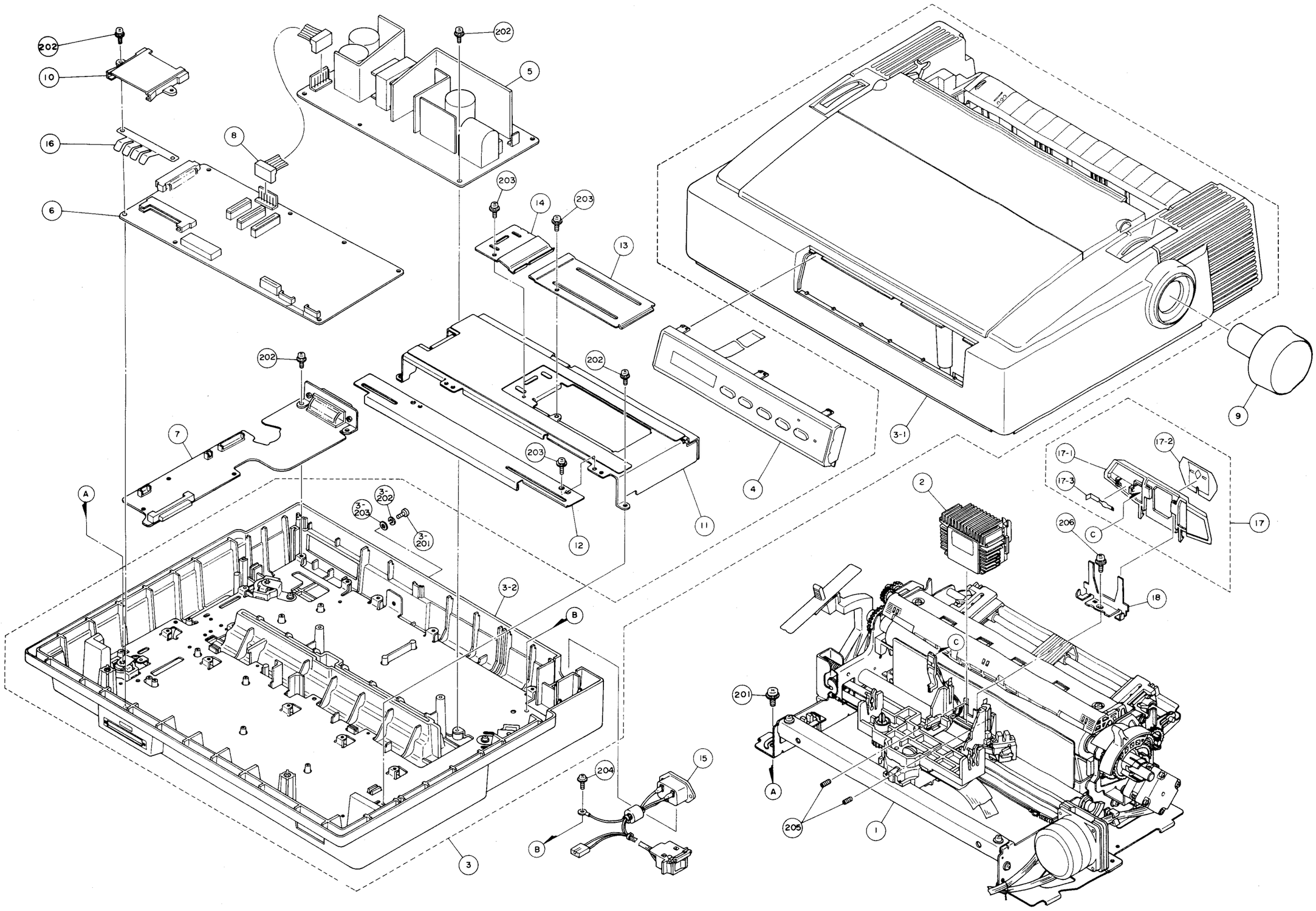


Figure 7-6 Printer Unit (N)

Printer Unit (W) (136-227694-801-A)

ITEM	PART NAME	PART NUMBER	Q'TY*
1	Mechanism Unit (W) (See Figure 7-9 for breakdown)	136-227695-801-A*	1
2	MSC-24 P/H Assembly	136-227708-002-A	1
3	Housing Unit (E3 UK)	136-220250-801-A*	1
3-1	Upper Cover Assembly (E3 UK) (See Figure 7-26 for breakdown)	136-220253-801-A	1
3-2	Base Cover Assembly (E3 UK) (See Figure 7-24 for breakdown)	136-220252-801-A	1
3-201	Screw, CPIMSx4x8x3GF	805-000104-008-0*	1
3-202	Washer, #2STLWAx4x3GF	805-622104-0*	1
3-203	Washer, PIWAx4x3GF	805-610104-0*	1
4	PSG Operator Panel (See Figure 7-27 for breakdown)	808-812468-301-A	1
5	Power Board (See Figures 7-28 and 7-29 for breakdown)	808-xxxxxx-313-A**	1
6	Mother Board, G8KNHA (See Figure 7-30 for breakdown)	136-438082-001-A	1
7	Connection Board, G8ESV (See Figure 7-31 for breakdown)	136-436274-001-A	1
8	DC Cable	808-857768-201-A	1
9	Platen Knob	136-846283-001-A	1
10	Font Holder	136-843451-301-A	1
11	Shield Cover Assembly	136-227824-301-A*	1
12	ROM Cover	136-868833-301-A*	1
13	Carrier Cable Cover	136-868802-301-A	1
14	Cable Holder	136-868843-301-A*	1
15	Power Switch Cable	808-740134-001-A	1
16	FG Spring	136-846906-001-A	1
17	Card Holder Subassembly	136-870198-001-A	1
17-1	Card Holder	136-870188-002-A*	1
17-2	Protect Plate	136-846366-101-A*	1
17-3	Sensor Lock Spring	136-870192-001-A*	1
18	Card Holder Bracket	136-870189-002-A	1
201	Screw, PL-CPIMSx5x8x15BF	805-300005-008-0*	4
202	Screw, STPL-CPIMSx3x10x15BF	808-802585-310-A*	23
203	Screw, CS-CPIMSx3x5x15BF	808-830044-305-0*	4
204	Screw, STPL-CPIMSx4x8x15BF	808-802585-408-A*	1
205	Nowpoint Set Screw, M2. 6L3	808-802002-263-0*	2
206	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0*	1

* Not available as a spare part.

** 808-891104-313-A: PSD POWER (C)
808-891379-313-A: PSG-C1 POWER

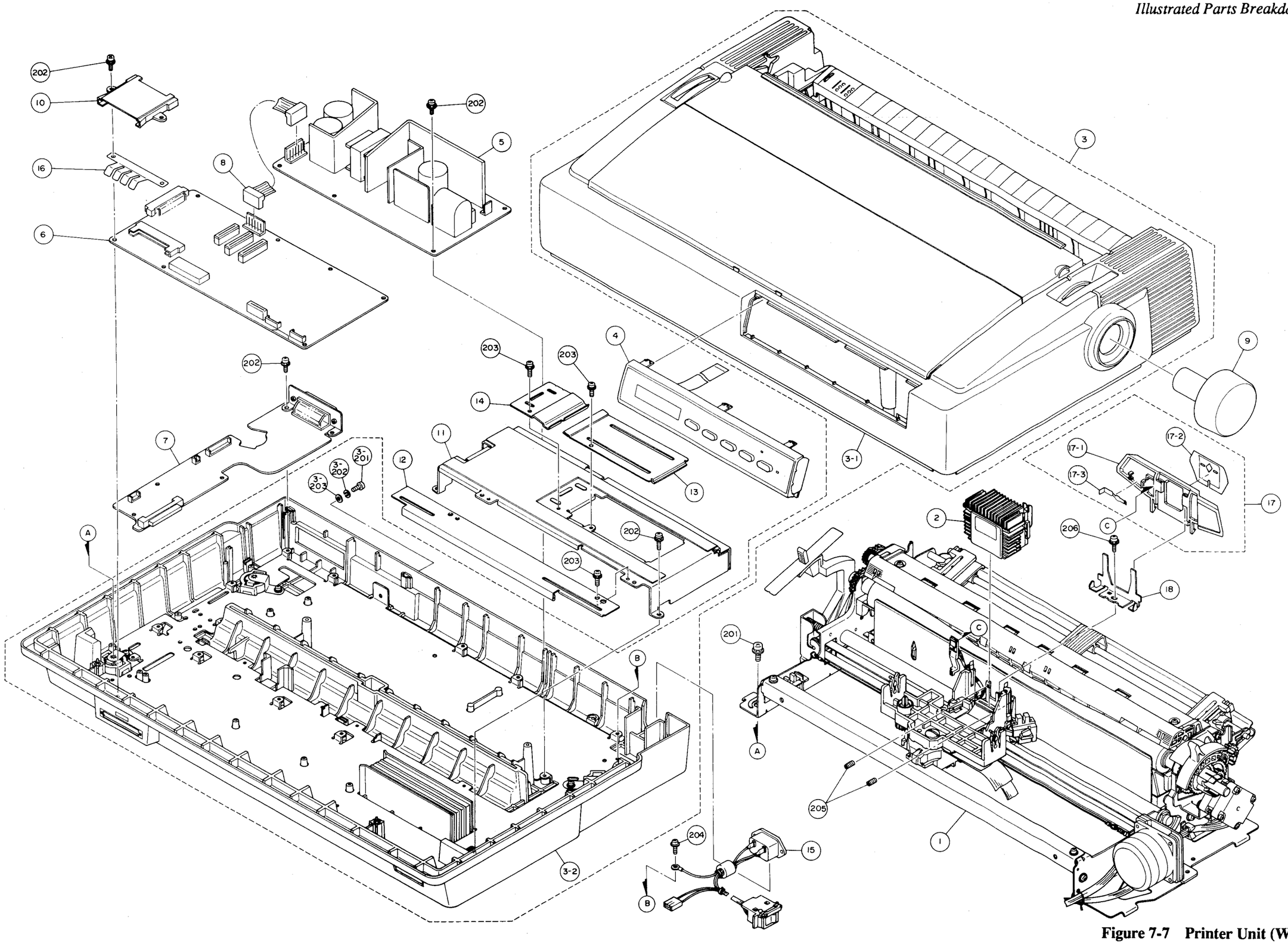


Figure 7-7 Printer Unit (W)

Mechanism Unit (N) (136-227695-301-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Frame Unit (N) (See Figure 7-10 for breakdown)	136-227696-301-A*	1
2	Ribbon Base (Black) Assembly	136-218465-001-A	1
3	Tractor Unit (N) (See Figure 7-19 for breakdown)	136-218463-001-A	1
4	Feed Roller Unit (N) (See Figure 7-21 for breakdown)	136-230164-301-A	1
201	Screw, STCS-CPIMSx4x6x15BF	136-802445-406-A*	2

* Not available as a spare part.

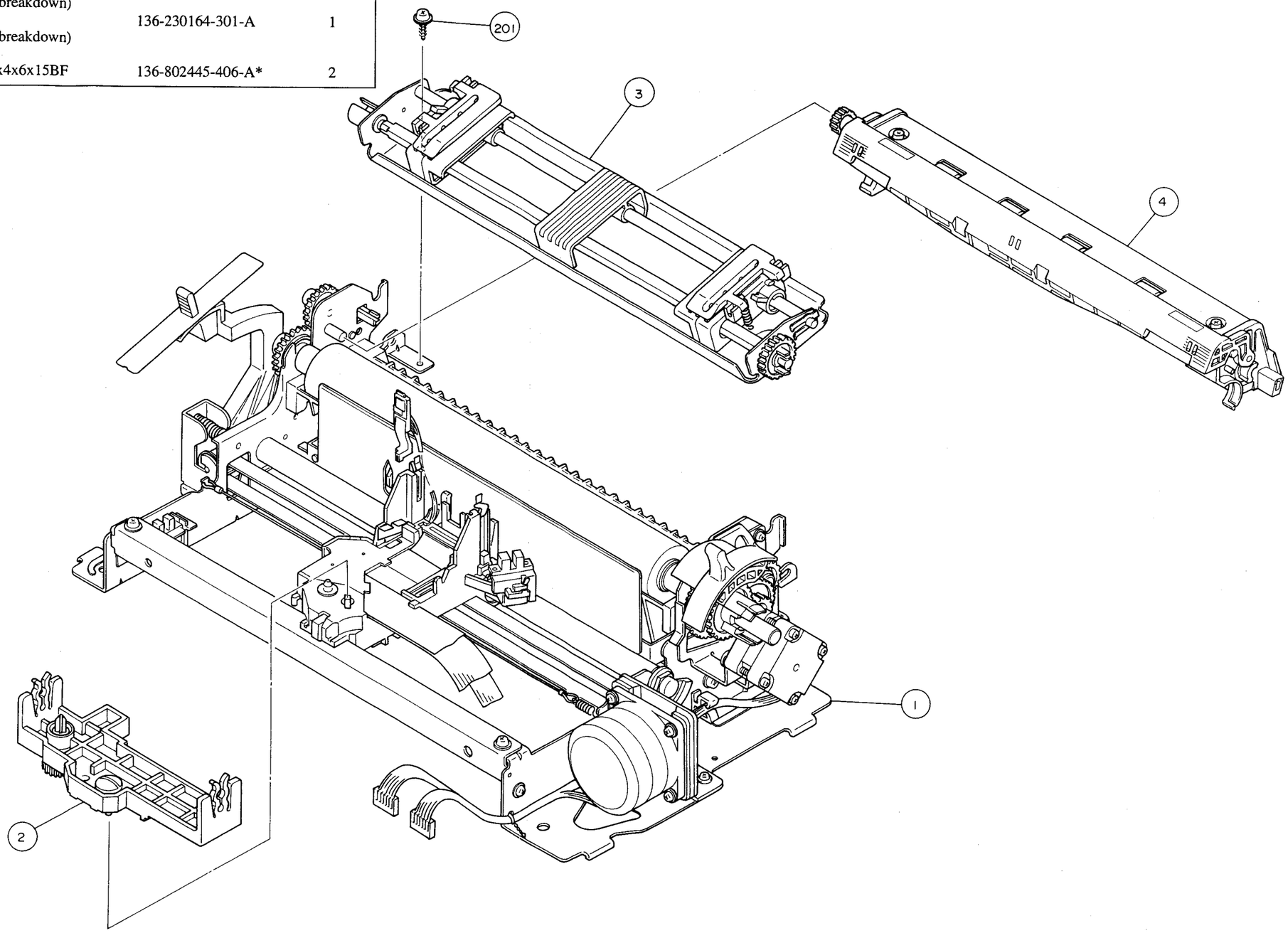


Figure 7-8 Mechanism Unit (N)

Mechanism Unit (W) (136-227695-801-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Frame Unit (W) (See Figure 7-11 for breakdown)	136-227696-801-A*	1
2	Ribbon Base (Black) Assembly	136-218465-001-A	1
3	Tractor Unit (W) (See Figure 7-20 for breakdown)	136-218463-501-A	1
4	Feed Roller Unit (W) (See Figure 7-21 for breakdown)	136-230164-801-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A*	2

* Not available as a spare part.

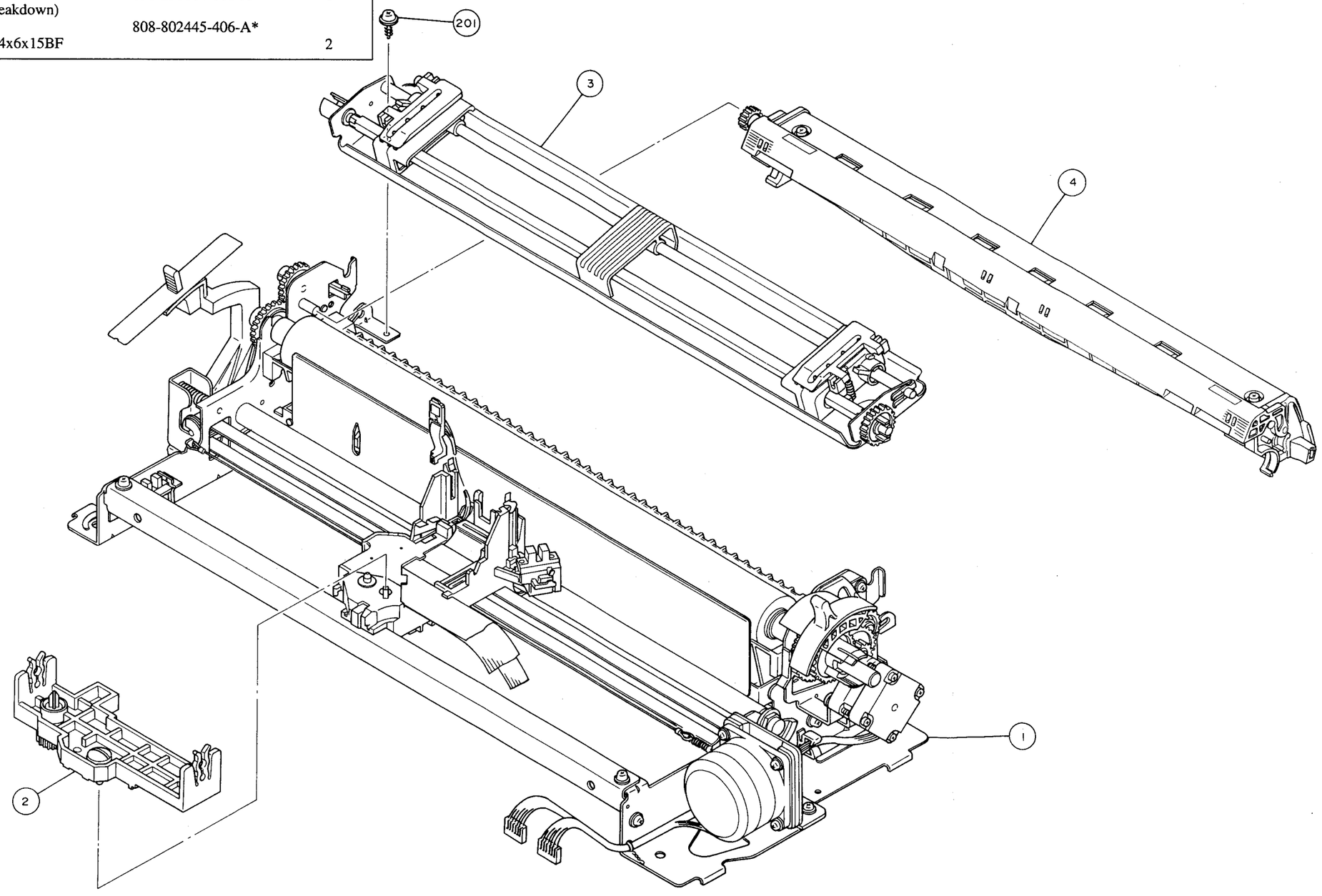


Figure 7-9 Mechanism Unit (W)

Frame Unit (N) (136-227693-301-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Frame Assembly (N) (See Figure 7-12 for breakdown)	136-218457-001-A*	1
2	Paper Release Arm	136-846287-001-A	1
3	LF Motor Unit	136-218460-001-A*	1
3-1	LF Motor Frame Subassembly	136-846276-001-A*	1
3-2	Slide Gear	136-846311-001-A	1
3-3	Slide Gear Spring	136-846312-001-A*	1
3-4	LF Gear	136-846310-001-A	1
3-5	LF Motor Assembly	808-869546-001-A	1
3-6	LF Plate	136-854346-001-A*	1
3-201	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0*	3
4	SP Motor Unit	136-227698-001-A*	1
4-1	SP Motor Bracket	136-870202-001-A*	1
4-2	SP Motor Assembly	808-805369-001-A	1
4-201	Screw, STCS-CPIMSx4x10x15BF	808-802445-410-A*	4
5	Platen Assembly (N) (See Figure 7-16 for breakdown)	136-218461-001-A	1
6	Option Gear	136-846288-001-A	1
7	H.P Sensor Assembly	808-820754-001-A*	1
8	Sensor & SW Assembly	136-870197-001-A	1
9	Carrier Unit (N)	136-227697-001-A*	1
9-1	Carrier Assembly (N) (See Figure 7-18 for breakdown)	136-870200-001-A	1
9-2	Carrier Cable (N) Assembly	808-844094-001-A	1
10	Guide Shaft (N)	136-846284-001-A	1
11	Eccentric Bushing	136-846383-001-A	1
12	Gap Adjust Lever	136-870204-001-A	1
13	Lever Sheet	136-846438-002-A*	1
14	Tension Arm Assembly	136-846302-001-A	1
14-1	Driven Pulley Unit	136-869024-001-A*	1
14-2	Tension Arm	136-846370-001-A*	1
15	Belt Tension Spring	136-846373-201-A*	1
16	Wire Tension Spring	136-846356-001-A*	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A*	7
202	Screw, PL-CPIMSx4x10x15BF	805-300004-010-0*	1
203	Screw, STSL-CPIMSx3x8x15BF	808-802446-308-A*	2
204	Vinyl Twist-Tie	808-835074-005-A*	1

* Not available as a spare part.

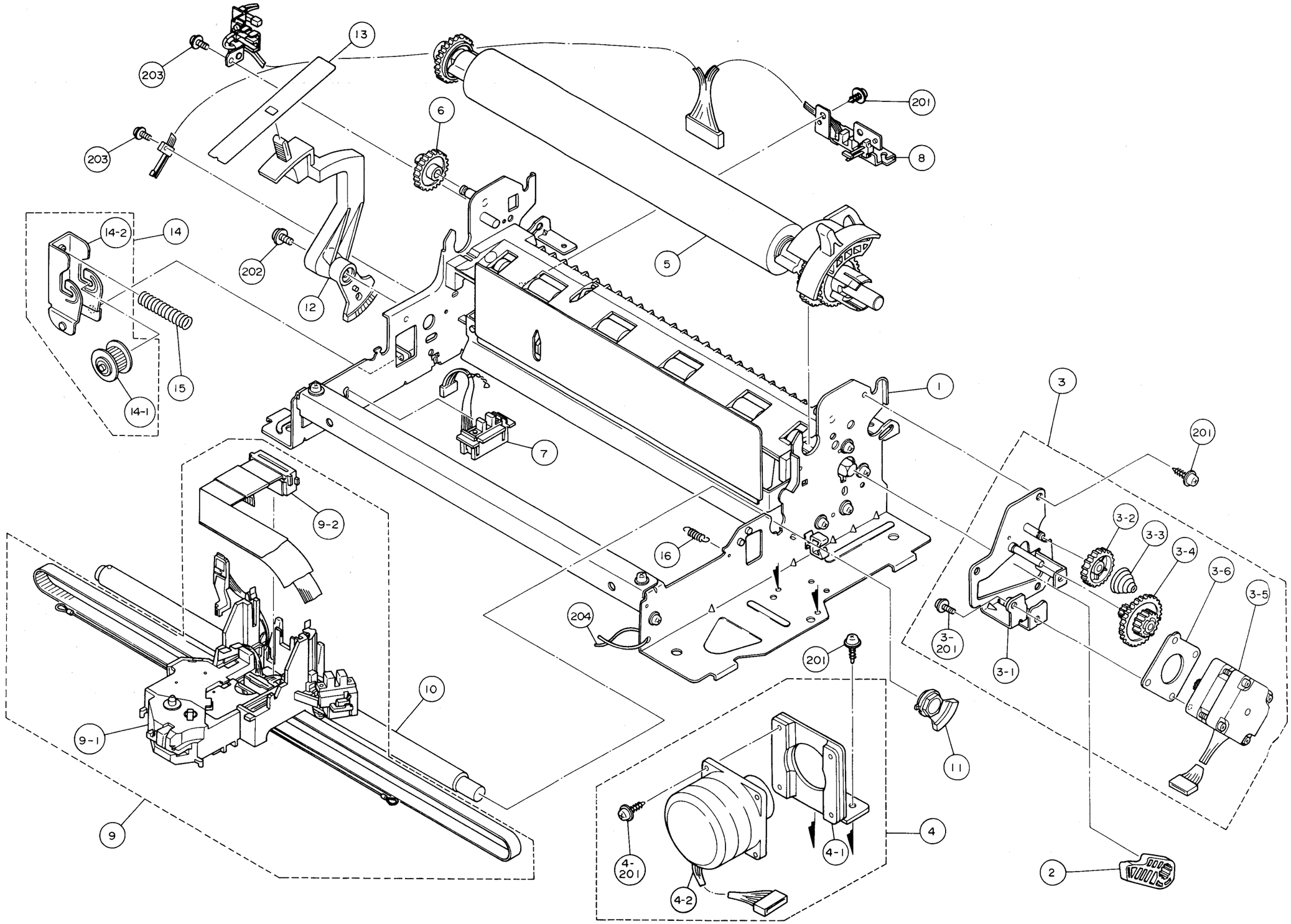


Figure 7-10 Frame Unit (N)

Frame Unit (W) (136-227696-801-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Frame Assembly (W) (See Figure 7-13 for breakdown)	136-218457-501-A*	1
2	Paper Release Arm	136-846287-001-A	1
3	LF Motor Unit	136-218460-001-A*	1
3-1	LF Motor Frame Subassembly	136-846276-001-A*	1
3-2	Slide Gear	136-846311-001-A	1
3-3	Slide Gear Spring	136-846312-001-A*	1
3-4	LF Gear	136-846310-001-A	1
3-5	LF Motor Assembly	808-869546-001-A	1
3-6	LF Plate	136-854346-001-A*	1
3-201	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0*	3
4	SP Motor Unit	136-227698-001-A	1
4-1	SP Motor Bracket	136-870202-001-A*	1
4-2	SP Motor Assembly	808-805369-001-A	1
4-201	Screw, STCS-CPIMSx4x10x15BF	808-802445-410-A*	4
5	Platen Assembly (W) (See Figure 7-17 for breakdown)	136-218461-501-A	1
6	Option Gear	136-846288-001-A	1
7	H.P Sensor Assembly	808-820754-001-A*	1
8	Sensor & SW Assembly	136-870197-001-A	1
9	Carrier Unit (W)	136-227697-501-A*	1
9-1	Carrier Assembly (W) (See Figure 7-18 for breakdown)	136-870200-501-A	1
9-2	Carrier Cable (W) Assembly	808-844094-501-A	1
10	Guide Shaft (W)	136-846284-501-A	1
11	Eccentric Bushing	136-846383-001-A	1
12	Gap Adjust Lever	136-870204-001-A	1
13	Lever Sheet	136-846438-002-A*	1
14	Tension Arm Assembly	136-846302-001-A	1
14-1	Driven Pulley Unit	136-869024-001-A*	1
14-2	Tension Arm	136-846370-001-A*	1
15	Belt Tension Spring	136-846373-201-A*	1
16	Wire Tension Spring	136-846356-001-A*	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A*	7
202	Screw, PL-CPIMSx4x10x15BF	805-300004-010-0*	1
203	Screw, STSL-CPIMSx3x8x15BF	808-802446-308-A*	2
204	Vinyl Twist-Tie	808-835074-005-A*	1

* Not available as a spare part.

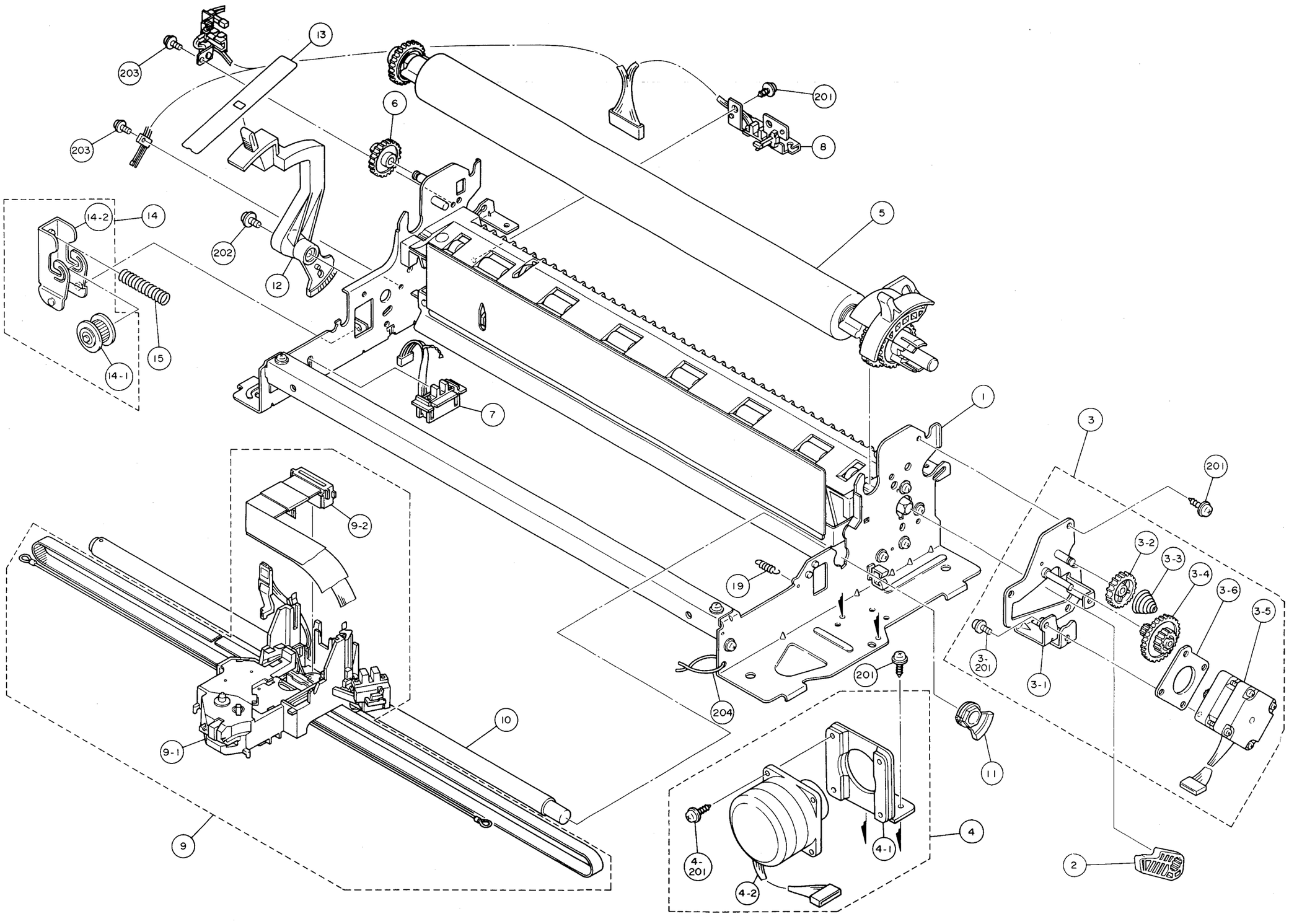
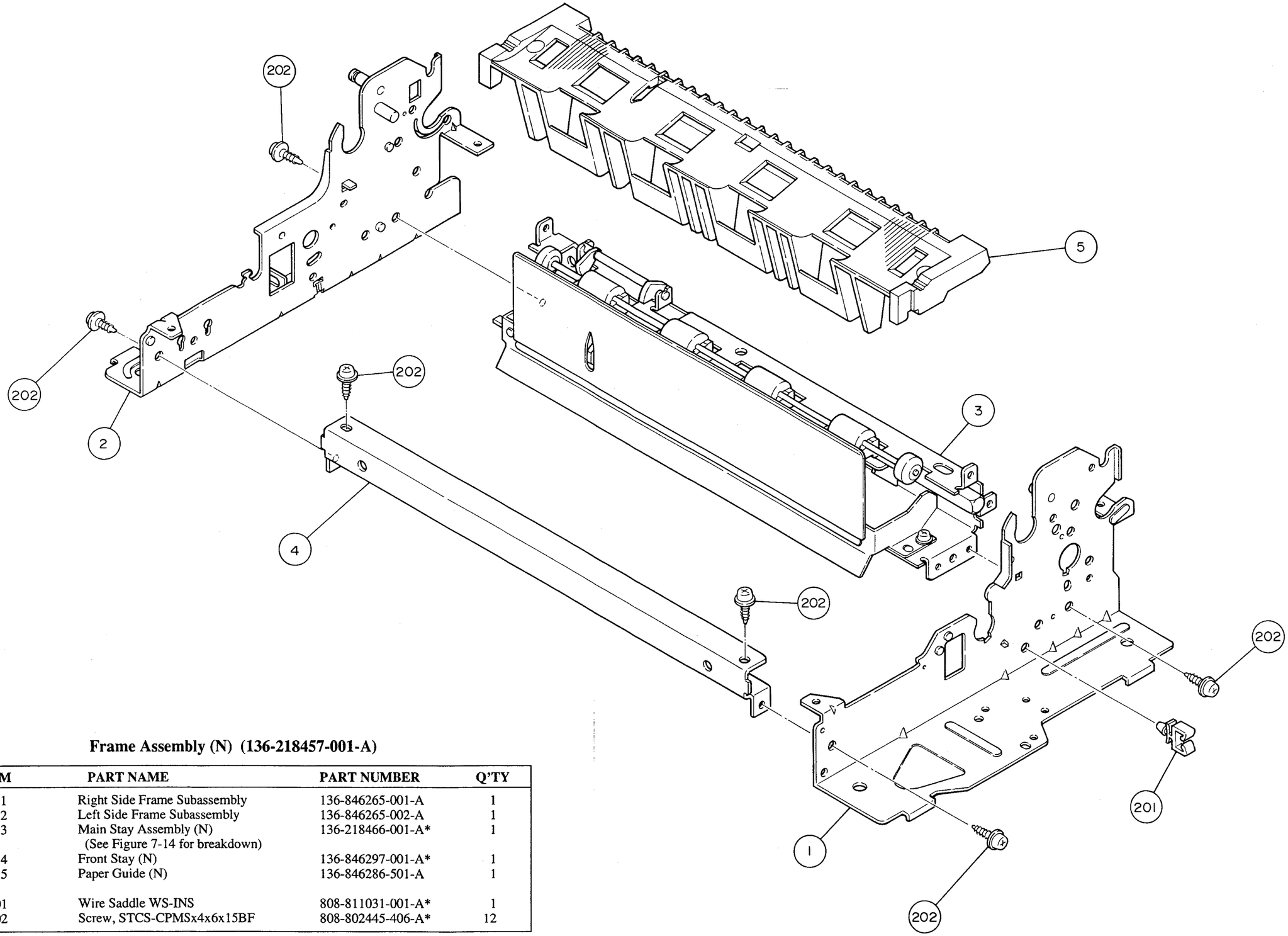


Figure 7-11 Frame Unit (W)



Frame Assembly (N) (136-218457-001-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Right Side Frame Subassembly	136-846265-001-A	1
2	Left Side Frame Subassembly	136-846265-002-A	1
3	Main Stay Assembly (N) (See Figure 7-14 for breakdown)	136-218466-001-A*	1
4	Front Stay (N)	136-846297-001-A*	1
5	Paper Guide (N)	136-846286-501-A	1
201	Wire Saddle WS-INS	808-811031-001-A*	1
202	Screw, STCS-CPMSx4x6x15BF	808-802445-406-A*	12

* Not available as a spare part.

Figure 7-12 Frame Assembly (N)

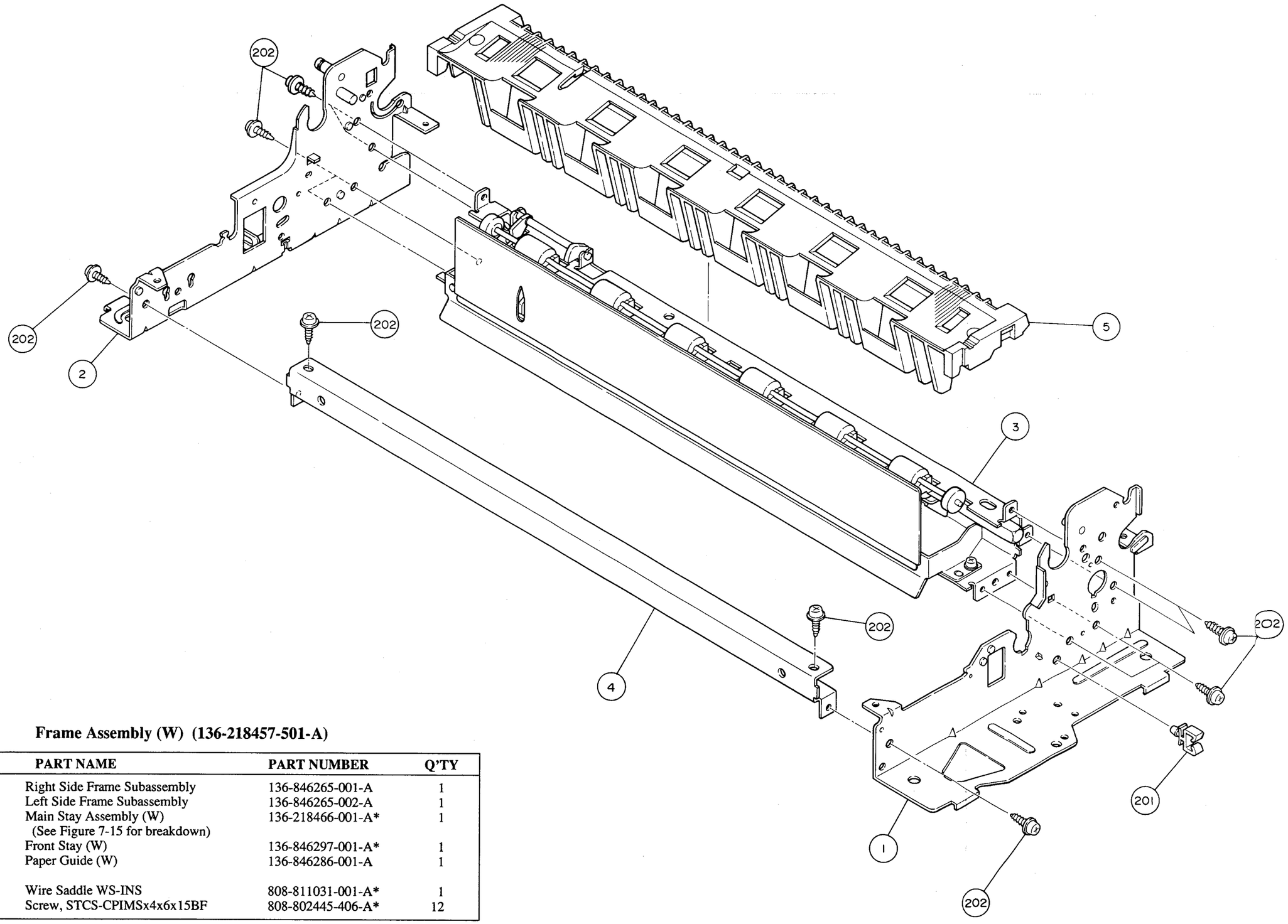


Figure 7-13 Frame Assembly (W)

Frame Assembly (W) (136-218457-501-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Right Side Frame Subassembly	136-846265-001-A	1
2	Left Side Frame Subassembly	136-846265-002-A	1
3	Main Stay Assembly (W) (See Figure 7-15 for breakdown)	136-218466-001-A*	1
4	Front Stay (W)	136-846297-001-A*	1
5	Paper Guide (W)	136-846286-001-A	1
201	Wire Saddle WS-INS	808-811031-001-A*	1
202	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A*	12

* Not available as a spare part.

Main Stay Assembly (N) (136-218466-001-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Main Stay (N)	136-846337-001-A*	1
2	Rear Paper End Lever	136-846344-001-A	1
3	Bottom MDL Lever	136-846345-001-A	1
4	Roller Support	136-846339-001-A	4
5	Roller Support Spring	136-846306-001-A*	4
6	Roller Support Bracket	136-846338-001-A*	4
7	Release Shaft (N)	136-846340-001-A*	1
8	Pressure Roller (N)	136-846341-001-A	1
9	Pressure Roller (F)	136-846342-001-A	4
10	Pressure Spring (N)	136-846406-001-A*	4
11	Bottom Guide Assembly (N)	136-846277-001-A*	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A*	2

* Not available as a spare part.

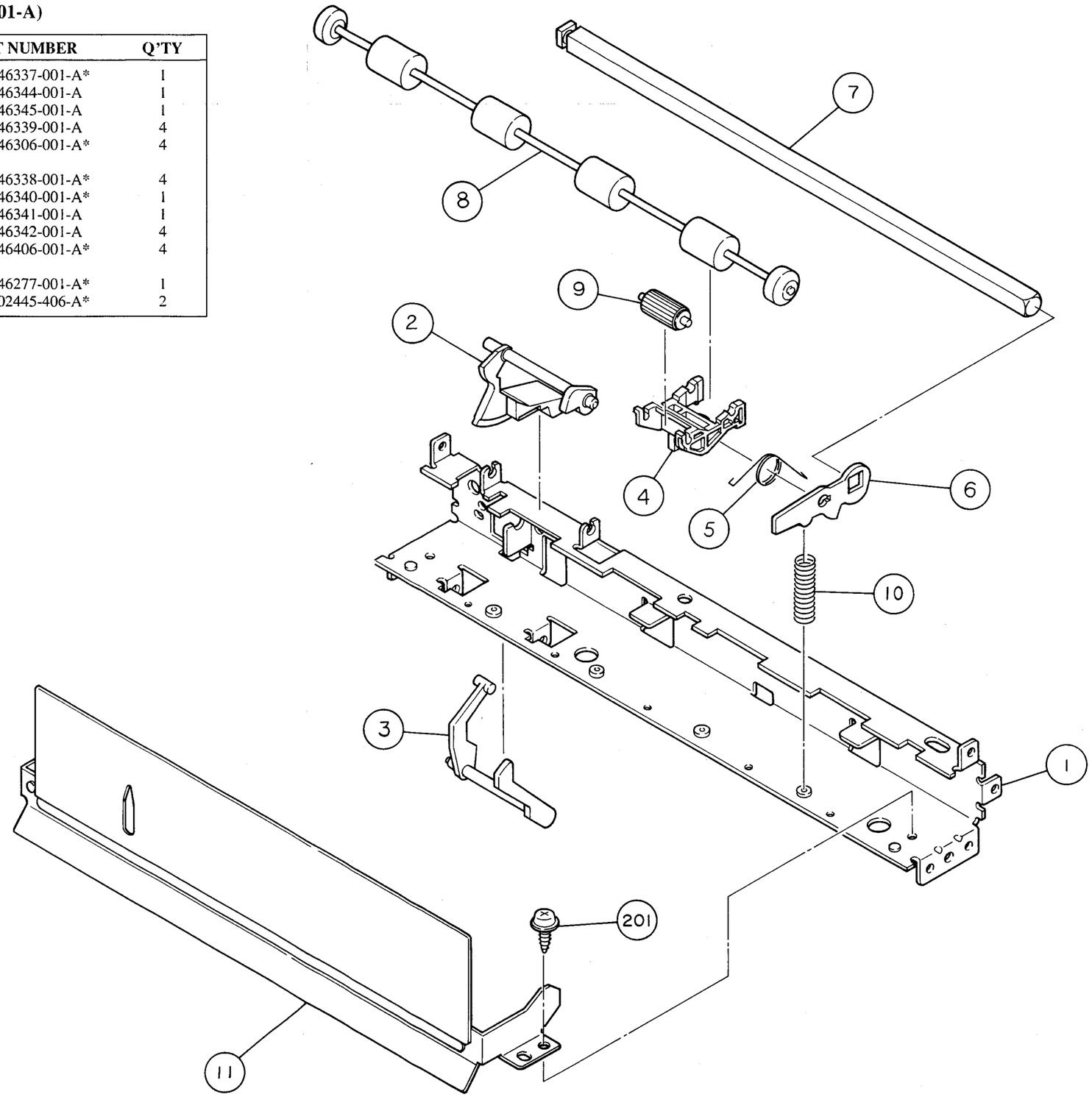


Figure 7-14 Main Stay Assembly (N)

Main Stay Assembly (W) (136-218466-501-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Main Stay (W)	136-846337-501-A*	1
2	Rear Paper End Lever	136-846344-001-A	1
3	Bottom MDL Lever	136-846345-001-A	1
4	Roller Support	136-846339-001-A	6
5	Roller Support Spring	136-846306-001-A*	6
6	Roller Support Bracket	136-846338-001-A*	6
7	Release Shaft (W)	136-846340-501-A*	1
8	Pressure Roller (W)	136-846341-501-A	1
9	Pressure Roller (F)	136-846342-001-A	6
10	Pressure Spring	136-846343-001-A*	6
11	Bottom Guide Assembly (W)	136-846277-501-A	1
201	Screw, STCS-CPIMSx4x6x15BF	808-802445-406-A*	2

* Not available as a spare part.

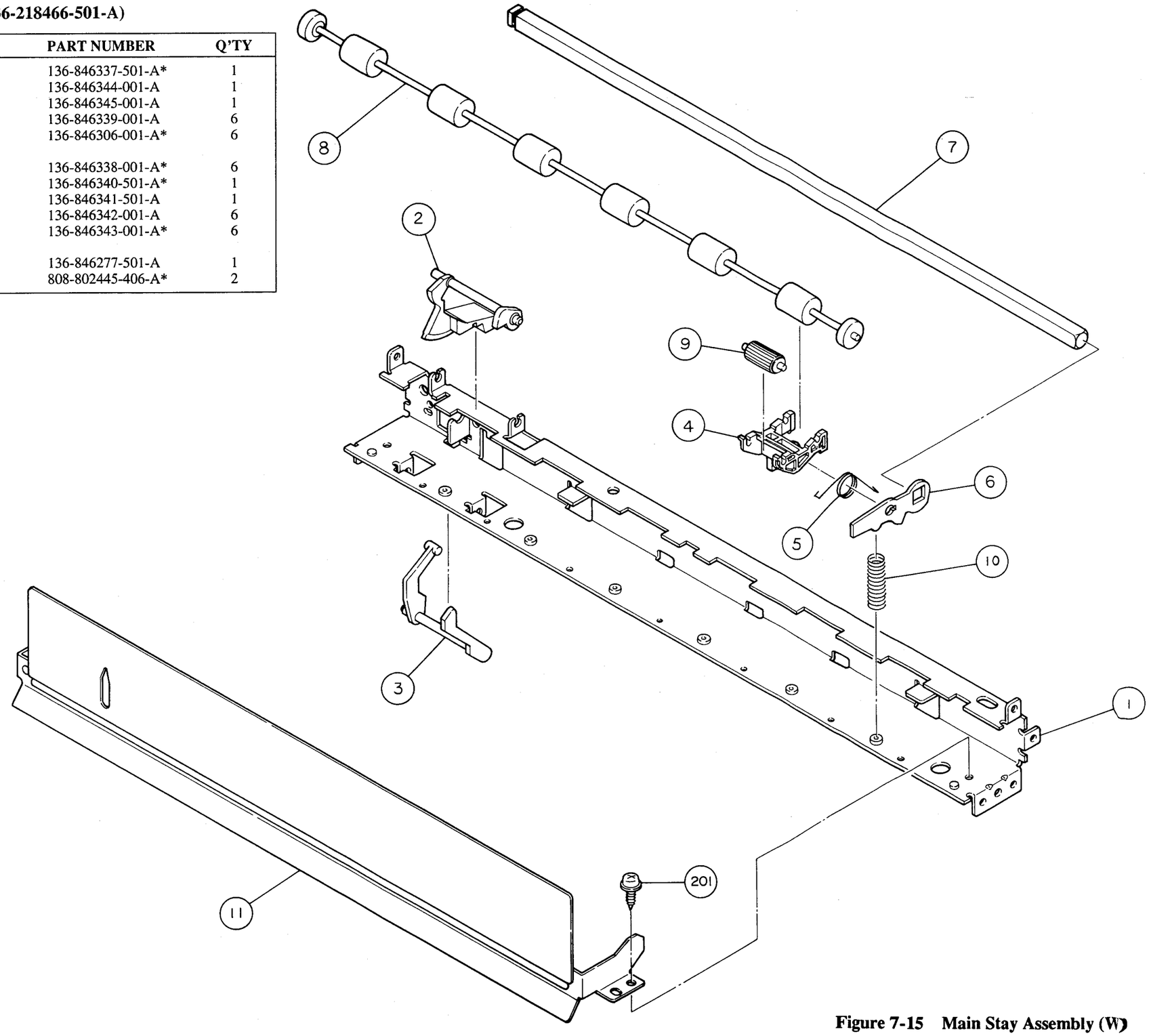


Figure 7-15 Main Stay Assembly (W)

Platen Assembly (N) (136-218461-001-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Platen (N)	136-846313-001-A*	1
2	Platen Bushing (LH)	136-846314-001-A*	1
3	Platen Bushing (RH)	136-846314-002-A*	1
4	Platen Thrust Shim	136-768495-0*	1
5	Option Drive Gear	136-846315-001-A*	1
6	Paper Selection Lever	136-846316-001-A*	1
7	Platen Gear	136-846317-001-A*	1
8	Manual Feed Gear	136-846318-001-A	1
201	Spring Pin	808-010022-314-0*	2

* Not available as a spare part.

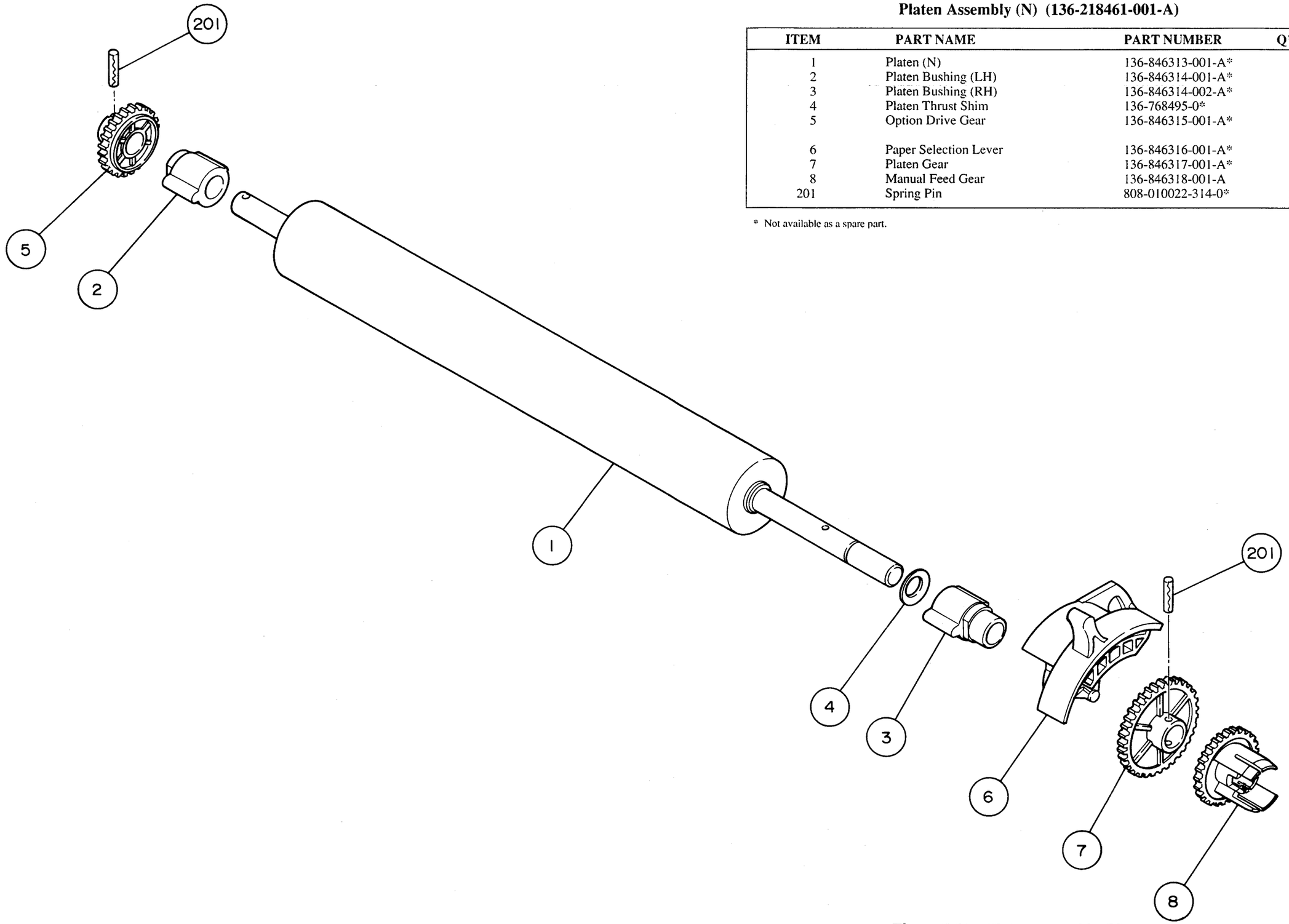


Figure 7-16 Platen Assembly (N)

Platen Assembly (W) (136-218461-501-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Platen (W)	136-846313-501-A*	1
2	Platen Bushing (LH)	136-846314-001-A*	1
3	Platen bushing (RH)	136-846314-002-A*	1
4	Platen Thrust Shim	136-768495-0*	1
5	Option drive Gear	136-846315-001-A*	1
6	Paper Selection Lever	136-846316-001-A*	1
7	Platen Gear	136-846317-001-A*	1
8	Manual Feed Gear	136-846318-001-A	1
201	Spring Pin	808-010022-314-0*	2

* Not available as a spare part.

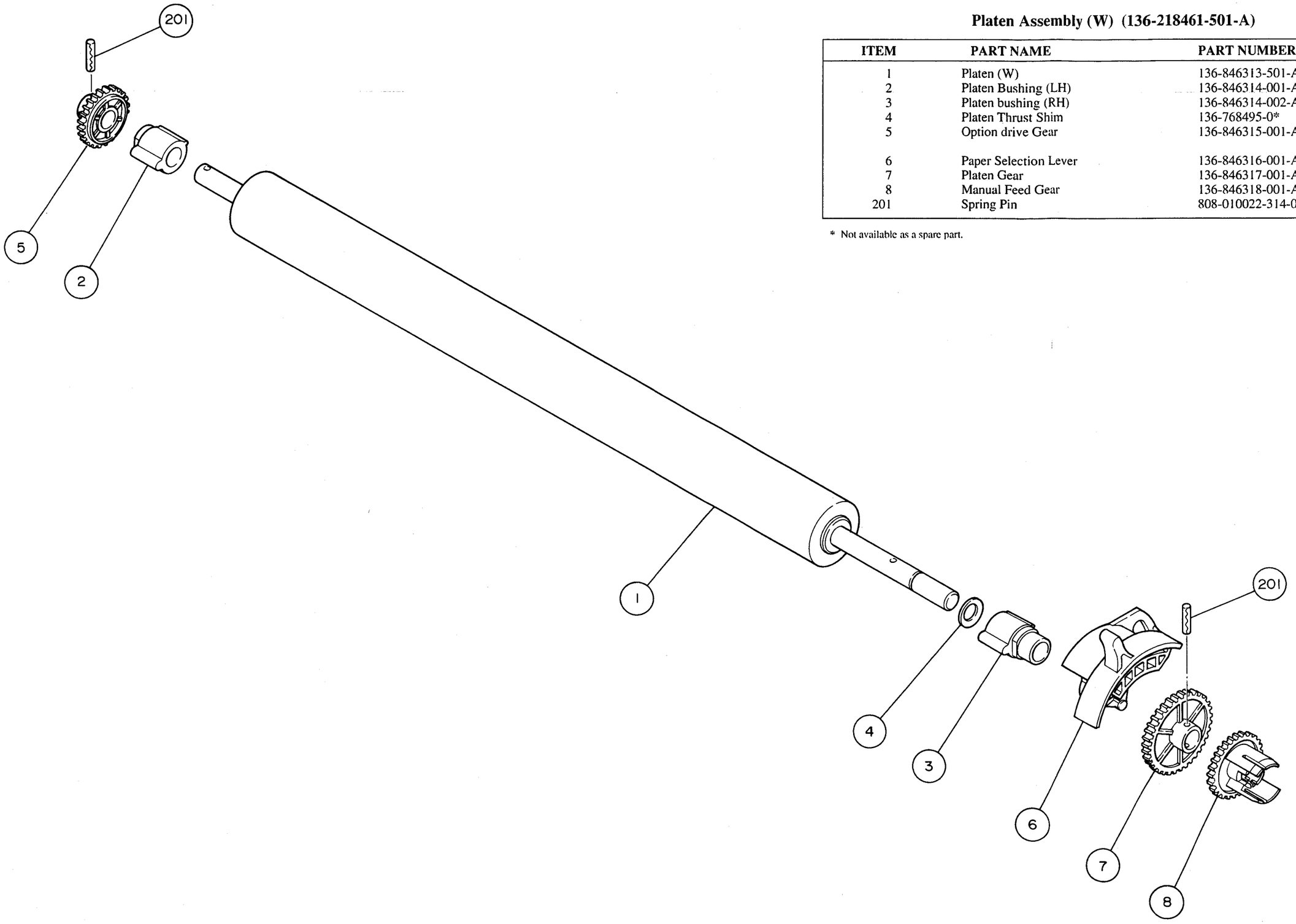


Figure 7-17 Platen Assembly (W)

Carrier Assembly (136-870200-GRP-A*)

ITEM	PART NAME	PART NUMBER	Q'TY 001	Q'TY 501
1	Carrier Subassembly (N)	136-870201-001-A	1	—
1	Carrier Subassembly (W)	136-870201-501-A	—	1
1-1	Carrier Frame Subassembly	136-846267-001-B**	1	1
1-2	Slide Set Piece	136-824597-001-B	1	1
1-3	Clamp Lever (LH)	136-846386-001-A	1	1
1-4	Clamp Lever (RH)	136-846386-002-A	1	1
1-5	Planetarium Gear	136-846358-001-A	2	2
1-6	Planetarium Arm Subassembly	136-854350-001-A	1	1
1-7	Ribbon Feed Pulley	136-846354-001-A	1	1
1-8	Ribbon Feed Wire (N) Assembly	808-812396-001-A	1	—
1-8	Ribbon Feed Wire (W) Assembly	808-812396-501-A	—	1
1-9	Pulley Case	136-846385-001-A**	1	1
1-10	Counter Gear	136-846359-001-A**	1	1
1-11	Ribbon Drive Gear	136-846360-001-A**	1	1
1-12	Timing Belt (N)	808-812393-001-A	1	—
1-12	Timing Belt (W)	808-812393-501-A	—	1
1-13	Belt Holder	136-846361-001-A**	1	1
1-14	Ribbon Sensor Assembly	808-821266-001-A**	1	1
1-15	Photo Sensor Clamp Plate	136-824599-001-A**	1	1
1-16	Carrier Frame cover	136-846362-001-A**	1	1
1-17	Carrier FG Spring (LH)	136-870190-001-A**	1	1
1-18	Carrier FG Spring (RH)	136-846367-002-A**	1	1
1-19	Holder Support	136-854360-001-A**	1	1
2	Piece (1)	136-846363-001-A	1	1

* GRP 001: P62
GRP 501: P72

** Not available as a spare part.

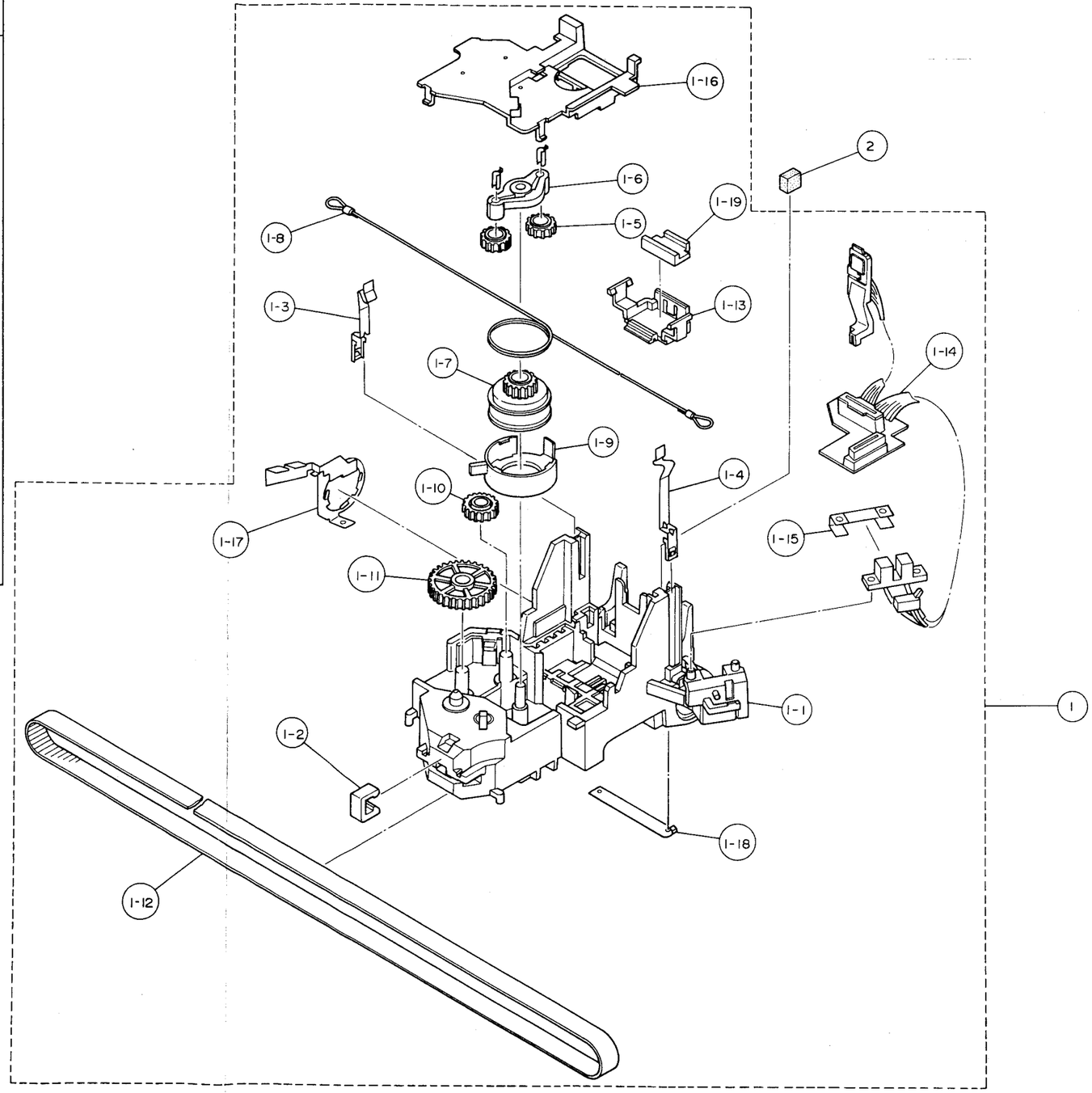


Figure 7-18 Carrier Assembly

Tractor Unit (N) (136-218463-001-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Tractor Frame (N)	136-846319-001-A*	1
2	Tractor Drive Shaft (N)	136-846320-001-A*	1
3	Tractor Support Shaft (N)	136-846321-001-A*	1
4	Tractor Assembly (L)	808-868140-012-A	1
5	Tractor Assembly (R)	808-868140-011-A	1
6	Tractor Bushing (LH)	136-846322-002-A	1
7	Tractor Bushing (RH)	136-846322-001-A	1
8	Center Guide	136-824533-001-A*	1
9	Tractor Gear	136-846323-001-A	1
201	Special Retainer	136-854347-001-A*	1

* Not available as a spare part.

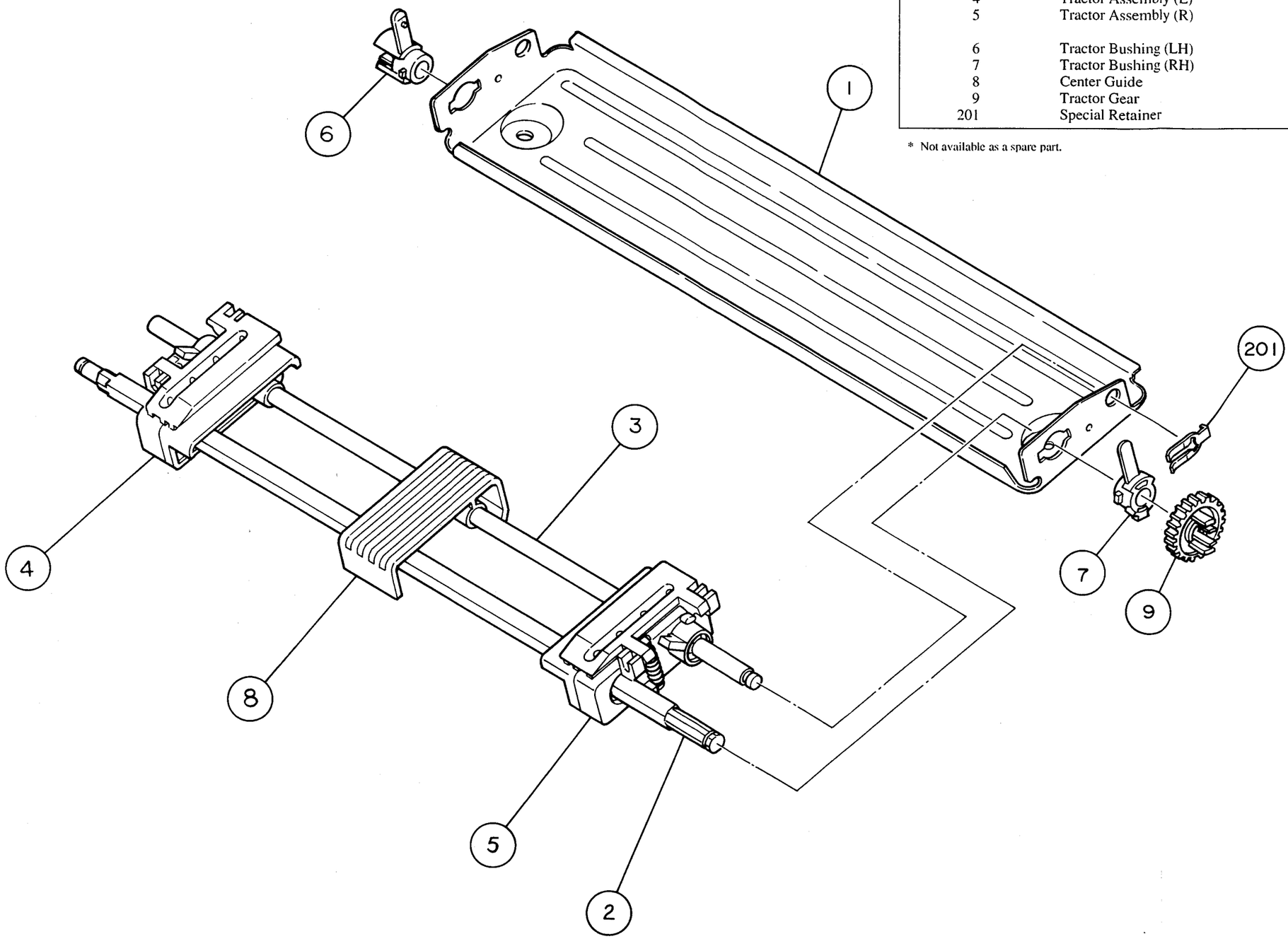


Figure 7-19 Tractor Unit (N)

Tractor Unit (W) (136-218463-501-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Tractor Frame (W)	136-846319-501-A*	1
2	Tractor Drive Shaft (W)	136-846320-501-A*	1
3	Tractor Support Shaft (W)	136-846321-501-A*	1
4	Tractor Assembly (L)	808-868140-012-A	1
5	Tractor Assembly (R)	808-868140-011-A	1
6	Tractor Bushing (LH)	136-846322-002-A	1
7	Tractor Bushing (RH)	136-846322-001-A	1
8	Center Guide	136-824533-001-A*	1
9	Tractor Gear	136-846323-001-A	1
201	Special Retainer	136-854347-001-A*	1

* Not available as a spare part.

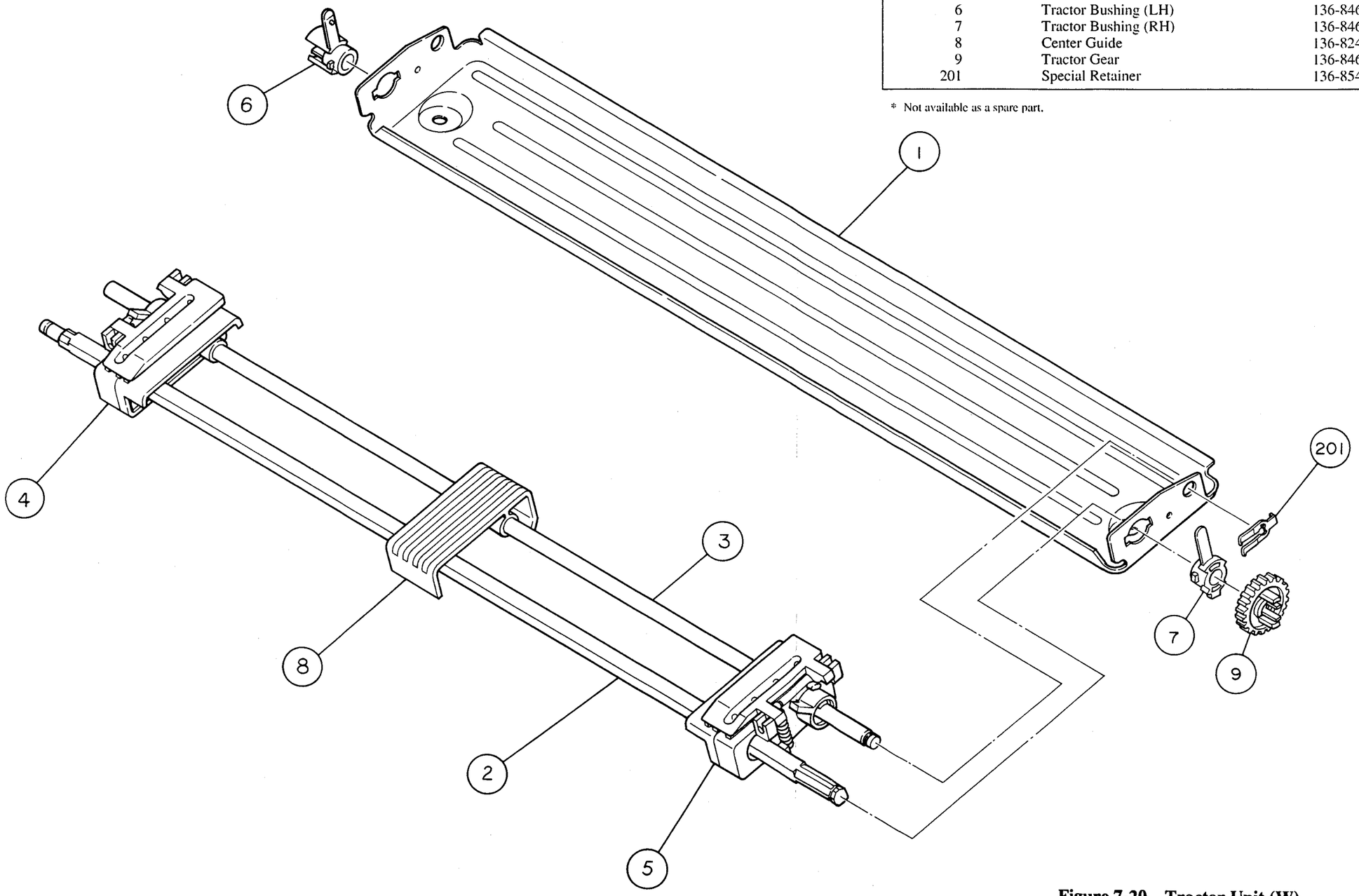


Figure 7-20 Tractor Unit (W)

Feed Roller Unit (N) (136-230164-301-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Feed Roller Frame Assembly (N)	136-846273-001-A*	1
1-1	Feed Roller Frame (N)	136-846331-001-A*	1
1-2	Friction MDL Lever (N)	136-846332-001-A*	1
1-3	MDL Lever bushing	136-846305-001-A*	2
2	Feed Roller (N)	136-846326-001-A*	1
3	Feed Roller Shaft Bushing	136-846328-001-A*	2
4	Feed Roller Gear	136-846329-001-A*	1
5	Feed Roller Cover (N)	136-878775-301-A*	1
6	Bail Roller Guide Assembly (N)	136-227825-301-A*	1
6-1	Bail Roller Guide (N)	136-846298-001-A*	1
6-2	Suppoert Shaft (N)	136-846368-001-A*	1
6-3	Feed Assist Roller	136-846369-001-A*	8
6-4	Print Area Label L	136-707779-001-A	1
6-5	Print Area Label R	136-707779-002-A	1
201	Special Screw	136-846304-001-A*	2

* Not available as a spare part.

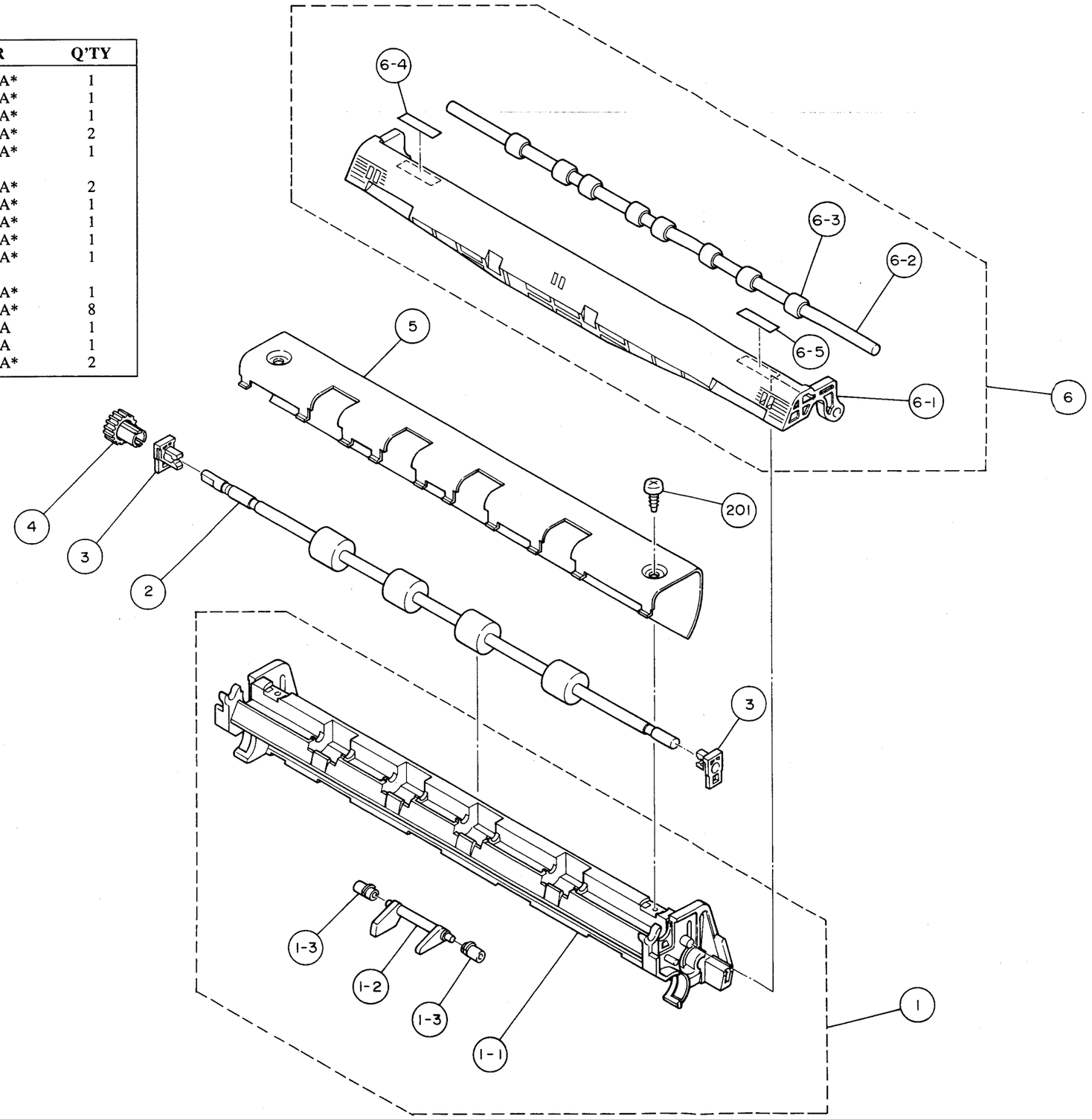


Figure 7-21 Feed Roller Unit (N)

Feed Roller Unit (W) (136-230164-801-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Feed Roller Frame Assembly (W)	136-846273-501-A*	1
1-1	Feed Roller Frame (W)	136-846331-501-A*	1
1-2	Friction MDL Lever (W)	136-846332-501-A*	1
1-3	MDL Lever bushing	136-846305-001-A*	2
2	Feed Roller (W)	136-846326-501-A*	1
3	Feed Roller Shaft Bushing	136-846328-002-A*	2
4	Feed Roller Gear	136-846329-001-A*	1
5	Feed Roller Cover (W)	136-878775-801-A*	1
6	Bail Roller Guide Assembly (W)	136-227825-801-A*	1
6-1	Bail Roller Guide (W)	136-846298-501-A*	1
6-2	Support Shaft (W)	136-846368-501-A*	1
6-3	Feed Assist Roller	136-846369-0010A*	12
6-4	Print Area Label (L)	136-707779-001-A	1
6-5	Print Area Label (R)	136-707779-002-A	1
21	Special Screw	136-846304-001-A*	2

* Not available as a spare part.

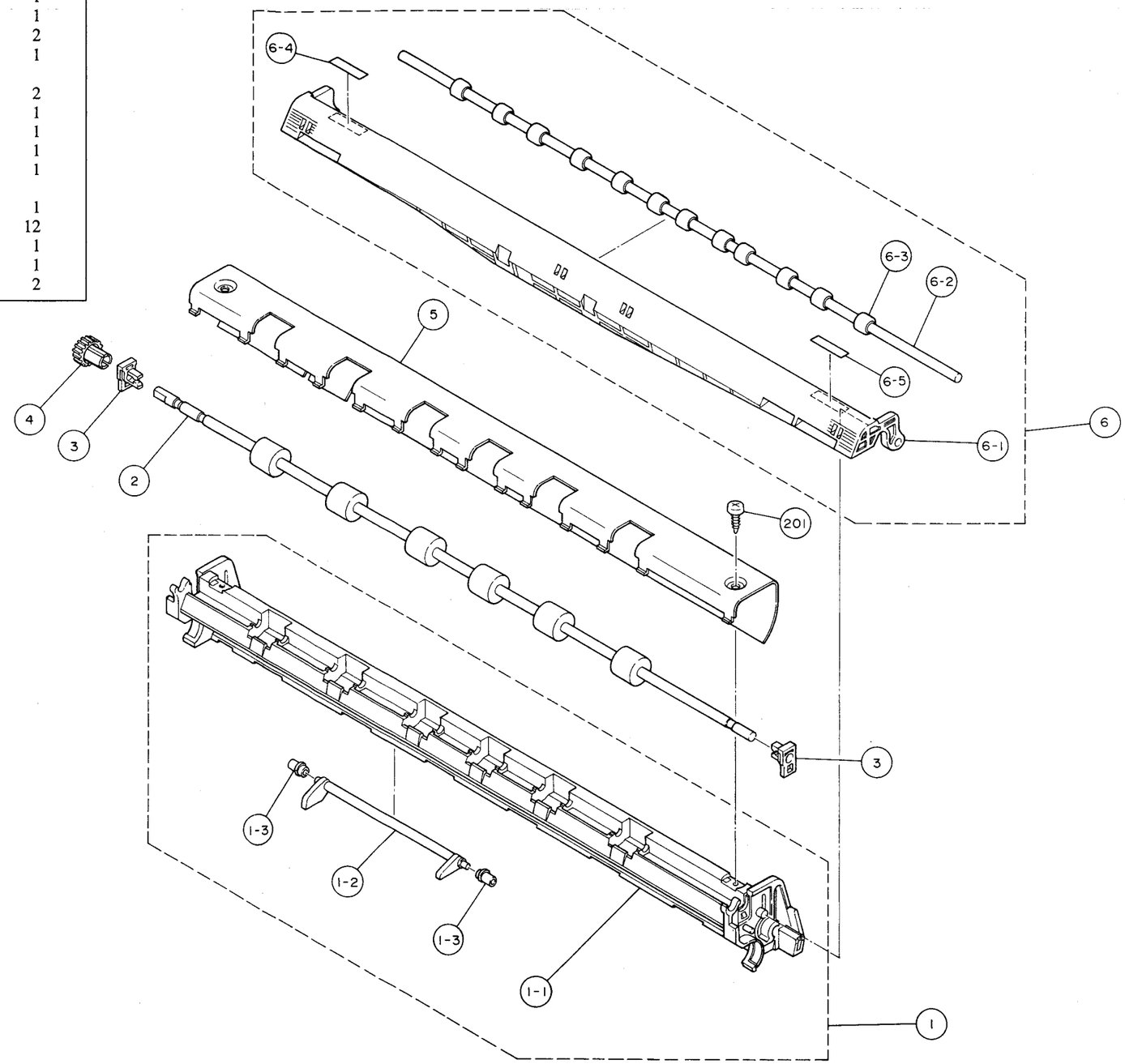


Figure 7-22 Feed Roller Unit (W)

Base Cover Assembly (E2 UK) (136-220252-301-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Base Cover (S)	136-868797-301-A*	1
2	Base Chassis (S)	136-868799-301-A*	1
3	Frame Foot	136-868844-001-A*	4
4	FG Plate	136-843459-001-A*	4
5	Spacer	136-868842-001-A*	2
201	Screw, STCS-CPIMSx3x6x15BF	808-802445-306-A*	4
202	Screw, STSL-CPIMSx4x12x15BF	808-802446-412-A*	4
203	Screw, PCBTSx4x8x15BF	808-802045-408-0*	5

* Not available as a spare part.

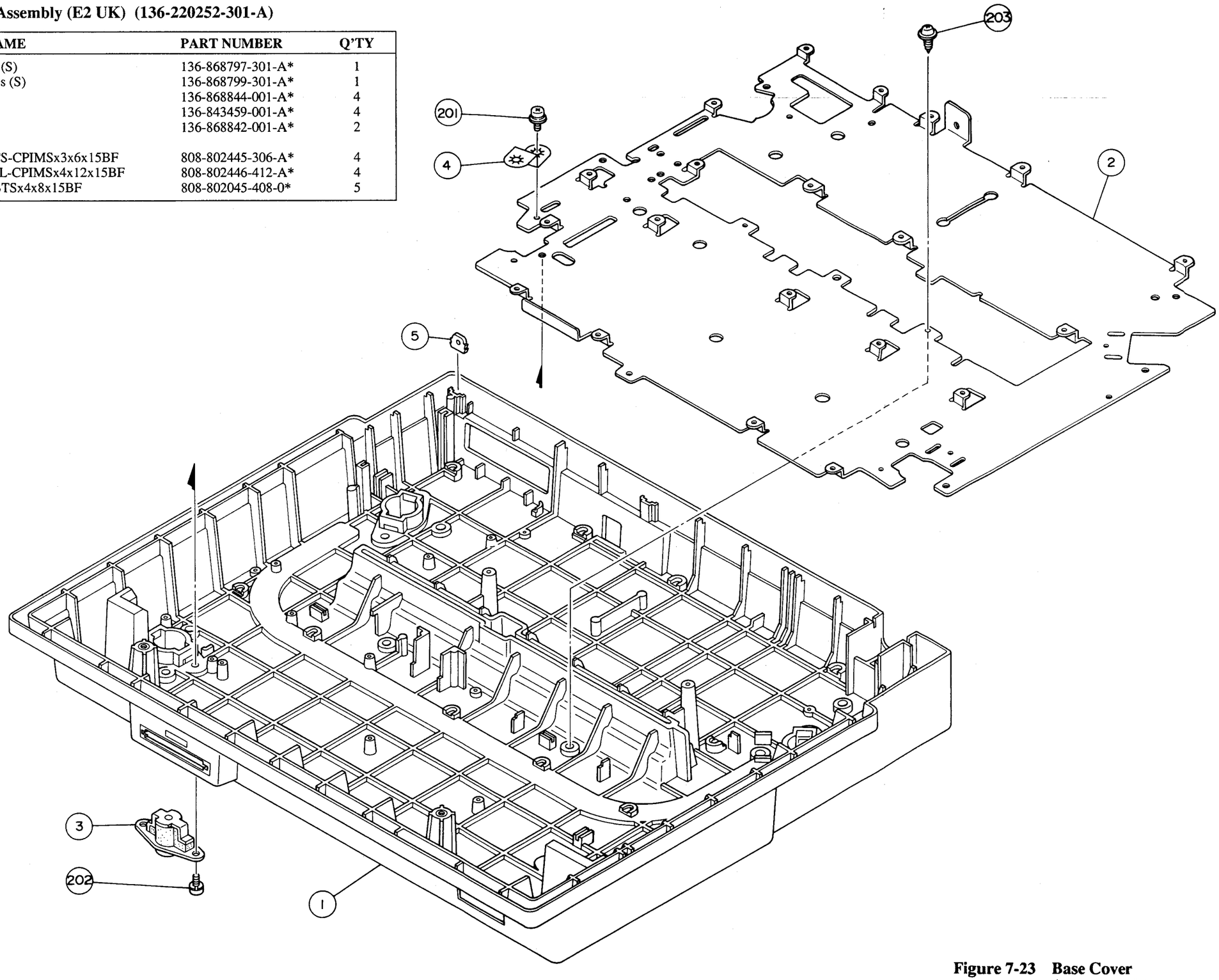


Figure 7-23 Base Cover Assembly (E2 UK)

Base Cover Assembly (E3 UK) (136-220252-801-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Base Cover (L)	136-868798-801-A*	1
2	Base Chassis (L)	136-868800-801-A*	1
3	Frame Foot	136-868844-001-A*	4
4	FG Plate	136-843459-001-A*	4
5	Spacer	136-868842-001-A*	2
201	Screw, STCS-CPIMSx3x6x15BF	808-802445-306-A*	4
202	Screw, STSL-CPIMSx4x12x15BF	808-802446-412-A*	4
203	Screw, PCBTSx4x8x15BF	808-802045-408-0*	8

* Not available as a spare part.

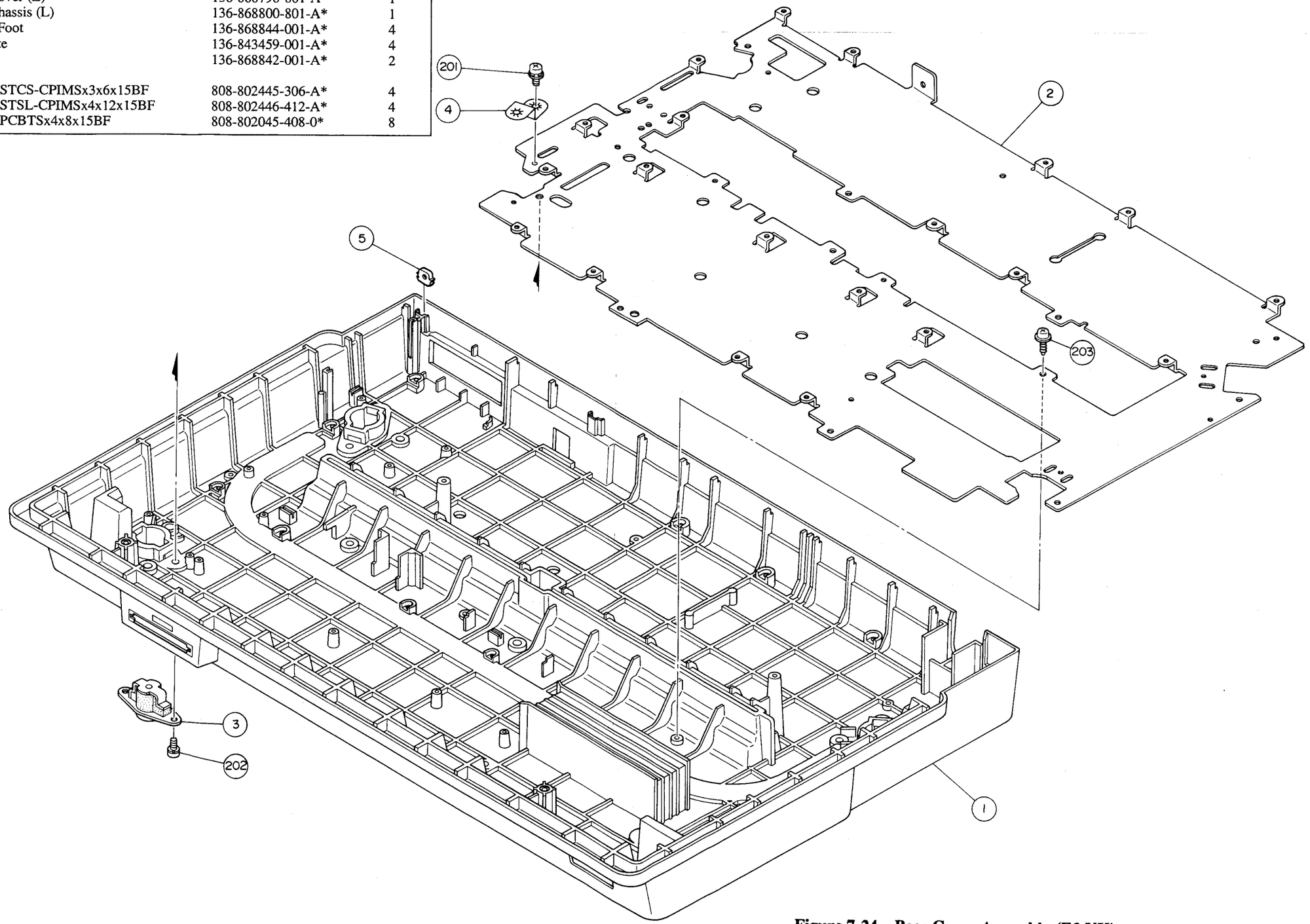


Figure 7-24 Base Cover Assembly (E3 UK)

Upper Cover Assembly (E2 UK) (136-220253-301-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Middle Cover Assembly (S)	136-220254-301-A	1
2	Top Cover Assembly (E2 UK)	136-220255-301-A*	1
2-1	Top Cover Subassembly (E2 UK)	136-220256-301-A*	1
2-2	Canopy Assembly (S)	136-227822-301-A	1

* Not available as a spare part.

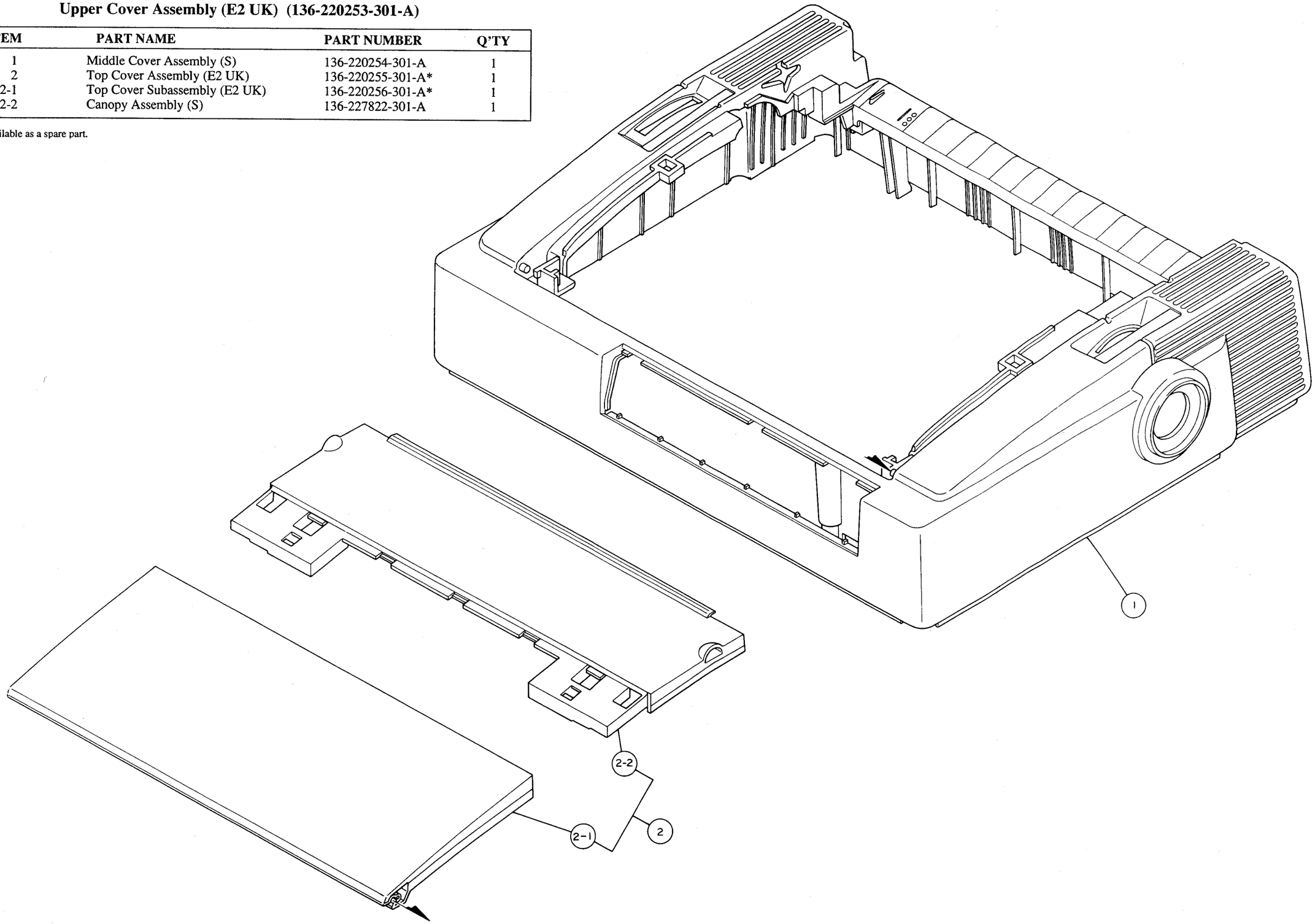


Figure 7-25 Upper Cover Assembly (E2 UK)

Upper Cover Assembly (E3 UK) (136-220253-801-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Middle Cover Assembly (L)	136-220254-801-A	1
2	Top Cover Assembly (E3 UK)	136-220255-801-A*	1
2-1	Top Cover Subassembly (E3 UK)	136-220256-801-A*	1
2-2	Canopy Assembly (L)	136-227822-801-A	1

* Not available as a spare part.

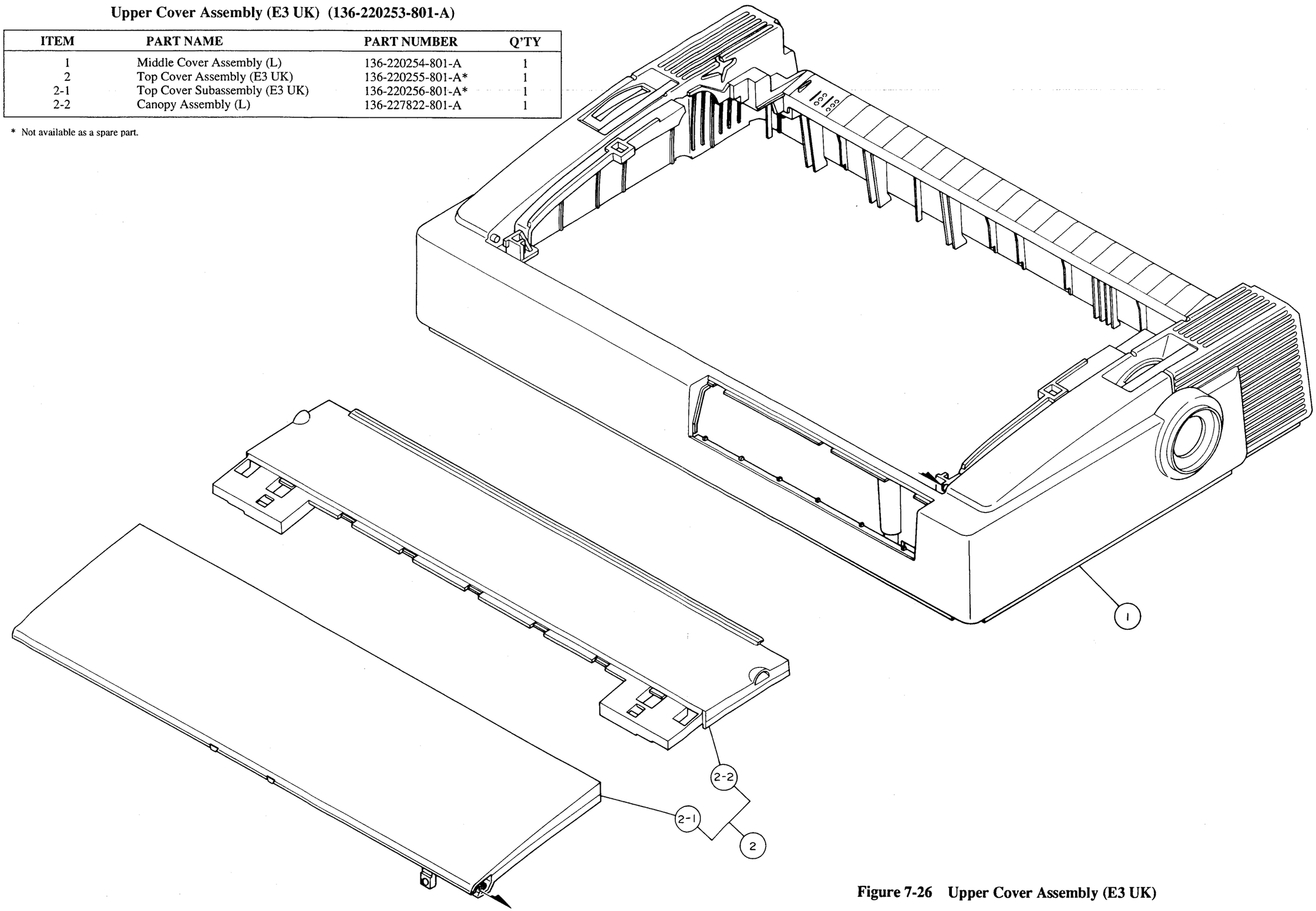


Figure 7-26 Upper Cover Assembly (E3 UK)

PSG Operator Panel (808-812468-301-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Operator Panel	136-868803-301-A*	1
2	Operator Panel Sheet	136-868832-301-A*	1
3	Operator Panel PCB Assembly	136-812468-602-A*	1
201	Screw, #2CPTSx2.6x6x15BF	808-060026-006-0*	6
202	Screw, PCBTSx2x5x15BF	808-802045-205-0*	2

* Not available as a spare part.

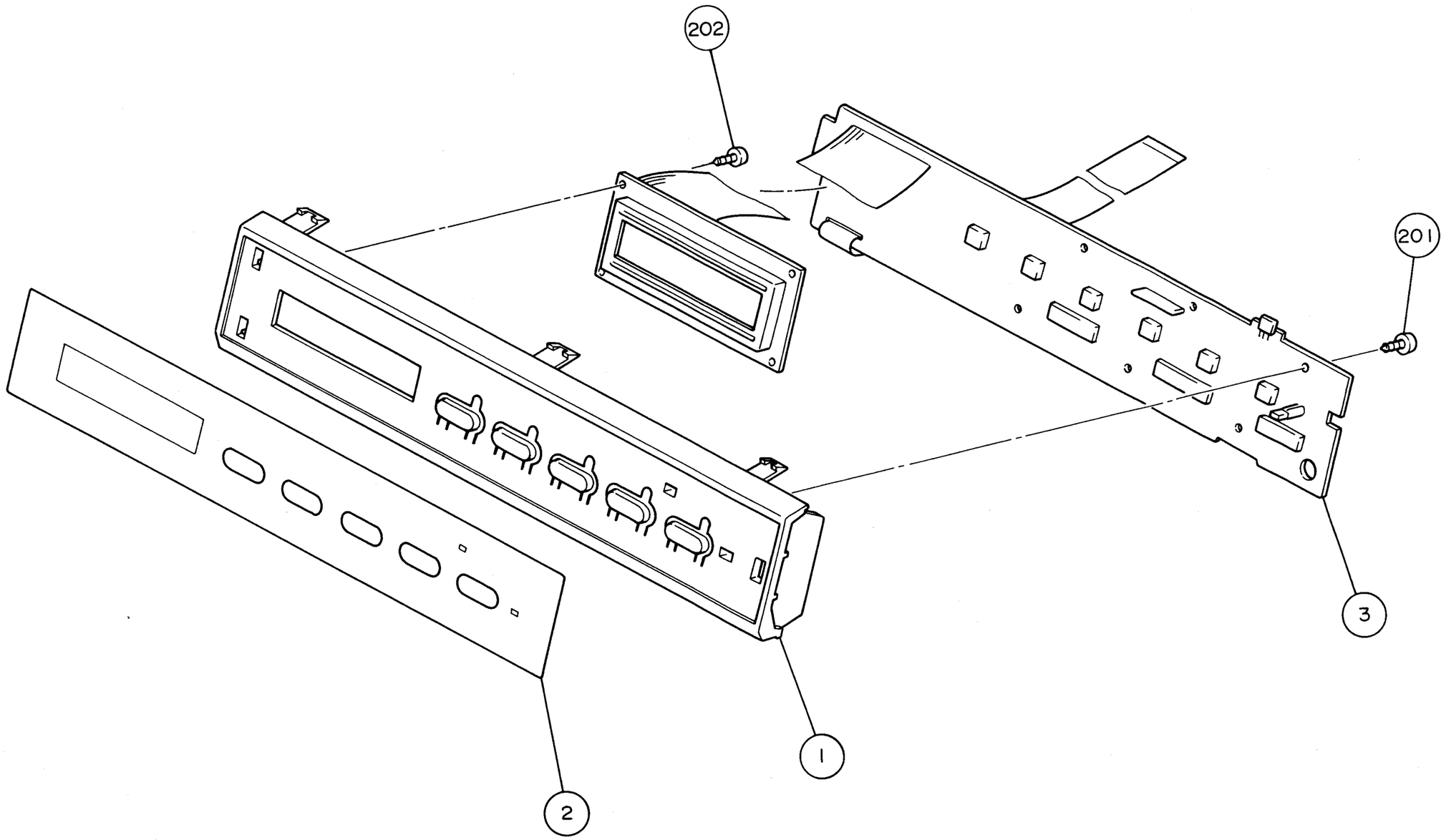


Figure 7-27 PSG Operator Panel

PSD POWER (C) (808-891104-313-A) - 1/2

COMPONENT DESIGNATION	PART NAME	PART NUMBER	Q'TY
R2, 3, 37, 38	RM, 1 W, 150 kΩ	808-891448-001-A	4
R6	RM, 1 W, 33 Ω	808-891448-002-A	1
R8	RM, 3 W, 22 Ω	808-891448-003-A	1
R10	RM, 2 W, 22 kΩ	808-891448-004-A	1
R11	RM, 3 W, 47 kΩ	808-891448-005-A	1
R12	RM, 3 W, 150 Ω	808-891448-006-A	1
R14	RM, 3 W, 4.7 Ω	808-891448-007-A	1
R19	RM, 2 W, 1 Ω	808-891448-008-A	1
R27	RM, 1/2 W, 22 Ω	808-891448-009-A	1
R28	RM, 1/2 W, 1.5 Ω	808-891448-010-A	1
R30, 31	RM, 3 W, 1.5 kΩ	808-891448-011-A	2
R32	RM, 3 W, 15 Ω	808-891448-012-A	1
R33	RM, 2 W, 1 kΩ	808-891448-013-A	1
R40, 41	RM, 2 W, 47 kΩ	808-891448-014-A	2
R45, 46	RM, 2 W, 33 kΩ	808-891448-015-A	2
RX1	RC, 1/4 W, 1 kΩ	808-891448-021-A	1
RX2	RC, 1/4 W, 0 kΩ	808-891448-022-A	1
R1	RC, 1/4 W, 680 kΩ	808-891448-023-A	1
R5, 13, 20, 21, 34	RC, 1/4 W, 1 kΩ	808-891448-024-A	5
R9	RC, 1/4 W, 6.8 kΩ	808-891448-025-A	1
R15	RC, 1/4 W, 4.7 kΩ	808-891448-026-A	1
R22	RC, 1/4 W, 270 Ω	808-891448-027-A	1
R23	RC, 1/4 W, 120 Ω	808-891448-028-A	1
R24	RC, 1/4 W, 1 kΩ	808-891448-029-A	1
R26	RC, 1/4 W, 27 Ω	808-891448-030-A	1
R35	RC, 1/4 W, 10 kΩ	808-891448-031-A	1
R36	RC, 1/4 W, 1.2 kΩ	808-891448-032-A	1
R42	RC, 1/4 W, 2.2 kΩ	808-891448-033-A	1
R43	RC, 1/4 W, 3.3 kΩ	808-891448-034-A	1
R44	RC, 1/4 W, 33 kΩ	808-891448-035-A	1
R4	RS, 5 W, 22 Ω	808-891448-051-A	1
RV1	RV, 200 Ω	808-891448-061-A	1
RV2	RV, 2 k Ω	808-891448-062-A	1
C5	CE, 400 V, 220 µF	808-891448-101-A	1
C12	CE, 25 V, 220 µF	808-891448-102-A	1
C13	CE, 65 V, 22 µF	808-891448-103-A	1
C14	CE, 16 V, 4700 µF	808-891448-104-A	1
C15	CE, 10 V, 1000 µF	808-891448-105-A	1
C17, 23	CE, 40 V, 10000 µF	808-891448-106-A	2
C28	CE, 50 V, 22 µF	808-891448-107-A	1
CX1	CF, 50 V, 1000 pF	808-891448-111-A	1
CX2	CF, 50 V, 0.22 µF	808-891448-112-A	1
C1	CF, AC250 V, 0.47 µF	808-891448-113-A	1
C2, 3, 30	CF, AC250 V, 0.0022 µF	808-891448-114-A	3
C4	CF, AC250 V, 0.22 µF	808-891448-115-A	1
C6	CF, AC250 V, 0.0033 µF	808-891448-116-A	1
C7	CF, 400 V, 0.1 µF	808-891448-117-A	1
C9, 10, 22	CF, 50 V, 0.1 µF	808-891448-118-A	3
C11	CF, 50 V, 0.022 µF	808-891448-119-A	1
C18, 19	CF, 50 V, 0.1 µF	808-891448-120-A	2

PSD POWER (C) (808-891104-313-A) -2/2

COMPONENT DESIGNATION	PART NAME	PART NUMBER	Q'TY
C21	CF, 50 V, 0.01 µF	808-891448-121-A	1
C25	CF, 630 V, 2200 pF	808-891448-122-A	1
C8	CC, 2 kV, 220 pF	808-891448-131-A	1
C16	CC, AC250 V, 4700 pF	808-891448-132-A	1
C26, 27	CC, AC250 V, 470 pF	808-891448-133-A	2
D1	DG, 1000 V, 0.8A	808-891448-201-A	1
D2, 9, 15, 16	DG, 6000 V, 1 A	808-891448-202-A	4
D4, 5, 7	DG, 50 V, 0.4 A	808-891448-203-A	3
D12, 14, 18	DG, 50 V, 0.3 A	808-891448-204-A	3
C13	DG, 50 V, 0.3 A	808-891448-205-A	1
D8	DS, 40 V, 1 A	808-891448-206-A	1
D3	DZ, 16 V, 0.5 W	808-891448-211-A	1
D6	DZ, 12 V, 0.5 W	808-891448-212-A	1
D17	DZ, 13 V, 0.5 W	808-891448-213-A	1
RC1	DB, 600 V, 6 A	808-891448-221-A	1
RC2	DS, 40 V, 5 A	808-891448-222-A	1
RC3	DF, 200 V, 10 A	808-891448-223-A	1
Q1, 4	TR, 800 V, 7 A	808-891448-231-A	2
Q2	TR, 60 V, 6 A	808-891448-232-A	1
Q3	TR, 60 V, 0.8 A	808-891448-233-A	1
Q5	TR, 50 V, 10 A	808-891448-234-A	1
Q6	TR, 50 V, 0.15 A	808-891448-235-A	1
Z1	IC, SI-3052V	808-891448-241-A	1
Z2	IC, HA17431PA	808-891448-242-A	1
CR1	SCR, 200 V, 0.3 A	808-891448-251-A	1
CR2	TRI, 600 V, 10A	808-891448-252-A	1
PC1	PC	808-891448-261-A	1
NR1, 2	VR	808-891448-271-A	2
T1	CX47038-267	808-891448-301-A	1
L1	ELF18D850D	808-891448-311-A	1
L2	PLA1522B	808-891448-312-A	1
F1	FF, AC250 V, 3.15 A	808-891448-401-A	1
CN1	B2P3-VH	808-891448-501-A	1
CN2	B6P-VR	808-891448-502-A	1

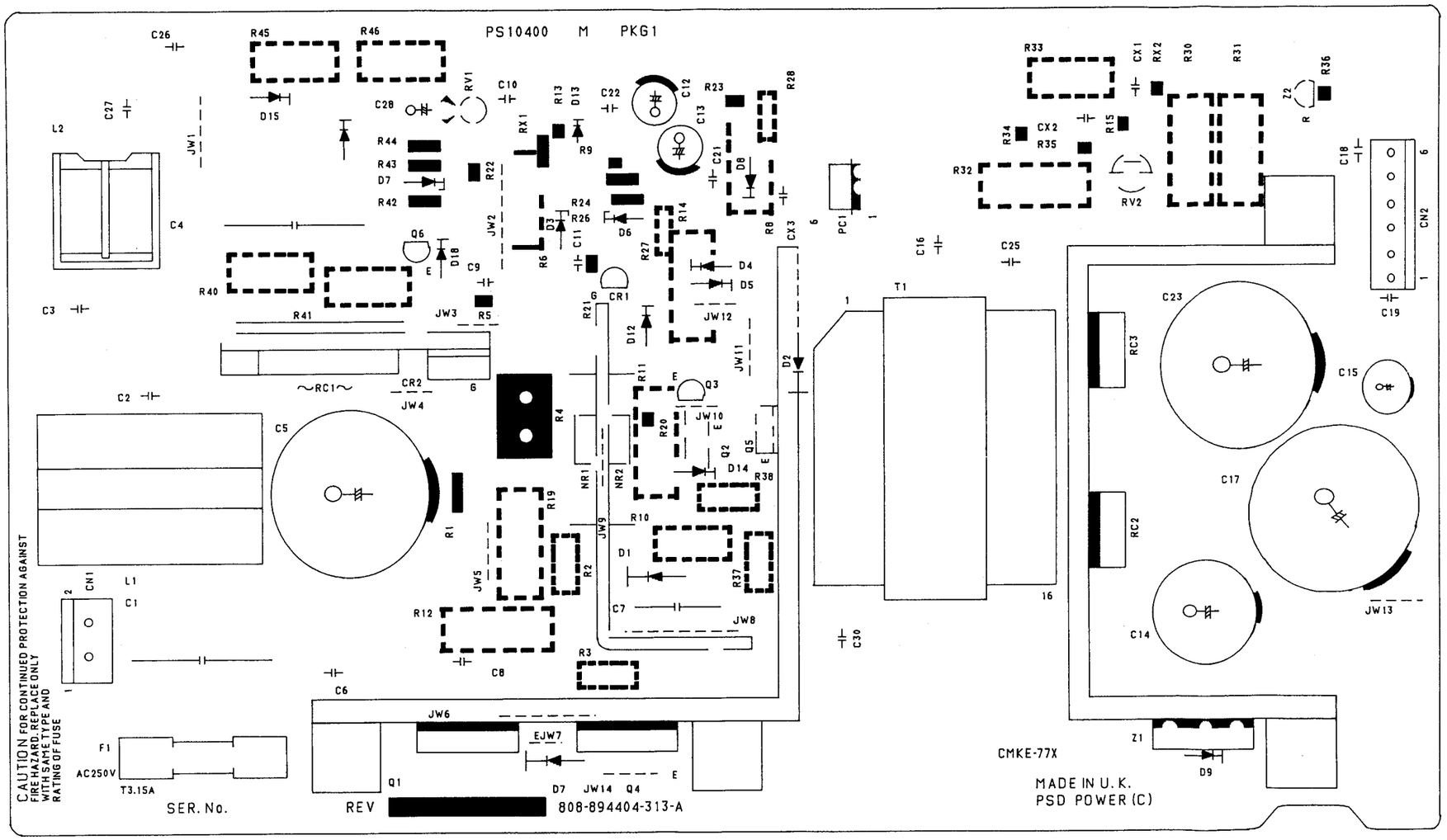


Figure 7-28 Power Board, PSD POWER (C)

Power Board, PSG-CI POWER (808-891379-313-A) - 1/2

COMPONENT DESIGNATION	PART NAME	PART NUMBER	Q'TY
R4	RM, 3 W, 33 Ω	808-891447-001-A	1
R5	RM, 2 W, 15 kΩ	808-891447-002-A	1
R6, 50	RM, 1/2 W, 150 kΩ	808-891447-003-A	2
R11	RM, 2 W, 68 Ω	808-891447-004-A	1
R19	RM, 2 W, 47 Ω	808-891447-005-A	1
R21, 48	RM, 2 W, 33 Ω	808-891447-006-A	2
R30, 38	RM, 3 W, 2.2 kΩ	808-891447-007-A	2
R39, 40	RM, 2 W, 33 kΩ	808-891447-008-A	2
R41, 42	RM, 3 W, 47 kΩ	808-891447-009-A	2
R49	RM, 3 W, 15 kΩ	808-891447-010-A	1
RX1	RC, 1/4 W, 2.7 kΩ	808-891447-021-A	1
RX3	RC, 1/4 W, 2.2 kΩ	808-891447-022-A	1
RX4	RC, 1/4 W, 220 Ω	808-891447-023-A	1
R1	RC, 1/4 W, 680 kΩ	808-891447-024-A	1
R8	RC, 1/4 W, 3.9 kΩ	808-891447-025-A	1
R9	RC, 1/4 W, 10 Ω	808-891447-026-A	1
R12	RC, 1/4 W, 10 kΩ	808-891447-027-A	1
R13	RC, 1/4 W, 560 Ω	808-891447-028-A	1
R14	RC, 1/4 W, 220 Ω	808-891447-029-A	1
R15, 29, 45, 47	RC, 1/4 W, 1 K Ω	808-891447-030-A	4
R16	RC, 1/4 W, 100 Ω	808-891447-031-A	1
R17, 53	RC, 1/4 W, 4.7 Ω	808-891447-032-A	2
R18	RC, 1/4 W, 470 Ω	808-891447-033-A	1
R23	RC, 1/4 W, 3.9 kΩ	808-891447-034-A	1
R24	RC, 1/4 W, 5.1 kΩ	808-891447-035-A	1
R25	RC, 1/4 W, 560 Ω	808-891447-036-A	1
R28, 44	RC, 1/4 W, 2.2 kΩ	808-891447-037-A	2
R31, 32	RC, 1/4 W, 270 kΩ	808-891447-038-A	2
R34, 35	RC, 1/4 W, 68 kΩ	808-891447-039-A	2
R43	RC, 1/4 W, 33 kΩ	808-891447-040-A	1
R51, 54, 56	RC, 1/4 W, 4.7 kΩ	808-891447-041-A	3
R52	RC, 1/4 W, 3.3 kΩ	808-891447-042-A	1
R55	RC, 1/4 W, 18 kΩ	808-891447-043-A	1
R3	RS, 5 W, 0.22 Ω	808-891447-051-A	1
R20	RS, 5 W, 1 kΩ	808-891447-052-A	1
R46	RS, 5 W, 22 Ω	808-891447-053-A	1
RV1	RV, 2 kΩ	808-891447-061-A	1
RV2	RV, 1 kΩ	808-891447-062-A	1
C8	CE, 200 V 1000 µF	808-891447-101-A	1
C13	CE, 50 V 1 µF	808-891447-102-A	1
C14	CE, 50 V 10 µF	808-891447-103-A	1
C23, 24	CE, 40 V, 10000 µF	808-891447-104-A	2
C30	CE, 16 V, 4700 µF	808-891447-105-A	1
C31	CE, 10 V, 1000 µF	808-891447-106-A	1
C42	CE, 50 V, 22 µF	808-891447-107-A	1
C44	CE, 25 V, 220 µF	808-891447-108-A	1
CX1	CF, 50 V, 0.47 µF	808-891447-111-A	1
C1	CF, AC250 V, 0.47 µF	808-891447-112-A	1
C2, 7	CF, AC250 V, 0.22 µF	808-891447-113-A	2
C10	CF, 400 V, 0.1 µF	808-891447-114-A	1

Power Board, PSG-CI POWER (808-891379-313-A) - 2/2

COMPONENT DESIGNATION	PART NAME	PART NUMBER	Q'TY
C15, 50	CF, 50 V, 0.047 µF	808-891447-115-A	2
C16	CF, 50 V, 0.00047 µF	808-891447-116-A	1
C17, 48, 49	CF, 50 V, 0.01 µF	808-891447-117-A	3
C25	CF, 50 V, 0.22 µF	808-891447-118-A	1
C33, 37, 38, 43	CF, 50 V, 0.1 µF	808-891447-119-A	4
C51	CF, 50 V, 0.0022 µF	808-891447-120-A	1
C3, 4, 18, 20, 39, 40	CF, AC250 V, 2200 pF	808-891447-131-A	5
C9, 28, 29	CF, 2 kV, 220 pF	808-891447-132-A	3
C11, 12	CF, 2 kV, 470 pF	808-891447-133-A	2
C21, 22	CF, 2 kV, 1 000 pF	808-891447-134-A	2
C41	CC, AC250 V, 10000 pF	808-891447-135-A	1
D1	DF, 1000 V, 0.1 A	808-891447-201-A	1
D3, 4, 16	DF, 70 V, 1.0 A	808-891447-202-A	3
D2, 5, 8	DG, 35 V, 0.15 A	808-891447-203-A	3
D6, 9	DG, 60 V, 0.15 A	808-891447-204-A	2
D12, 13, 14	DG, 400 V, 1.0 A	808-891447-205-A	3
D7	DZ, 10 V, 0.4 W	808-891447-211-A	1
D10	DZ, 8.2 V, 0.4 W	808-891447-212-A	1
D11	DZ, 6.8 V, 0.4 W	808-891447-213-A	1
D15	DZ, 13 V, 0.4 W	808-891447-214-A	1
RC1	DB, 600 V, 4 A	808-891447-221-A	1
RC2	DF, 200 V, 10 A	808-891447-222-A	1
RC3	DS, 60 V, 4 A	808-891447-223-A	1
Q1	TR, 900 V, 6 A	808-891447-231-A	1
Q2	TR, 50 V, 2 A	808-891447-232-A	1
Q3	TR, 60 V, 0.8 A	808-891447-233-A	1
Q4, 5, 7	TR, 50 V, 0.15 A	808-891447-234-A	3
Q6	TR, 40 V, 2 A	808-891447-235-A	1
Q8	TR, -50 V, -0.15 A	808-891447-236-A	1
Z1	IC, SI-3052V	808-891447-241-A	1
CR2	TRI, 600 V, 5 A	808-891447-251-A	1
PC1	PC	808-891447-261-A	1
T1	EXT43710-016	808-891447-301-A	1
L1	ELF18D850D	808-891447-311-A	1
L3	ELF18D290S	808-891447-312-A	1
FB1, 2	B-01-A	808-891447-321-A	2
FB3	B-20F-28	808-891447-322-A	1
F1	FF, AC250 V, 3.15 A	808-891447-401-A	1
CN1	B2P3-VH	808-891447-501-A	1
CN2	B6P-VR	808-891447-502-A	1

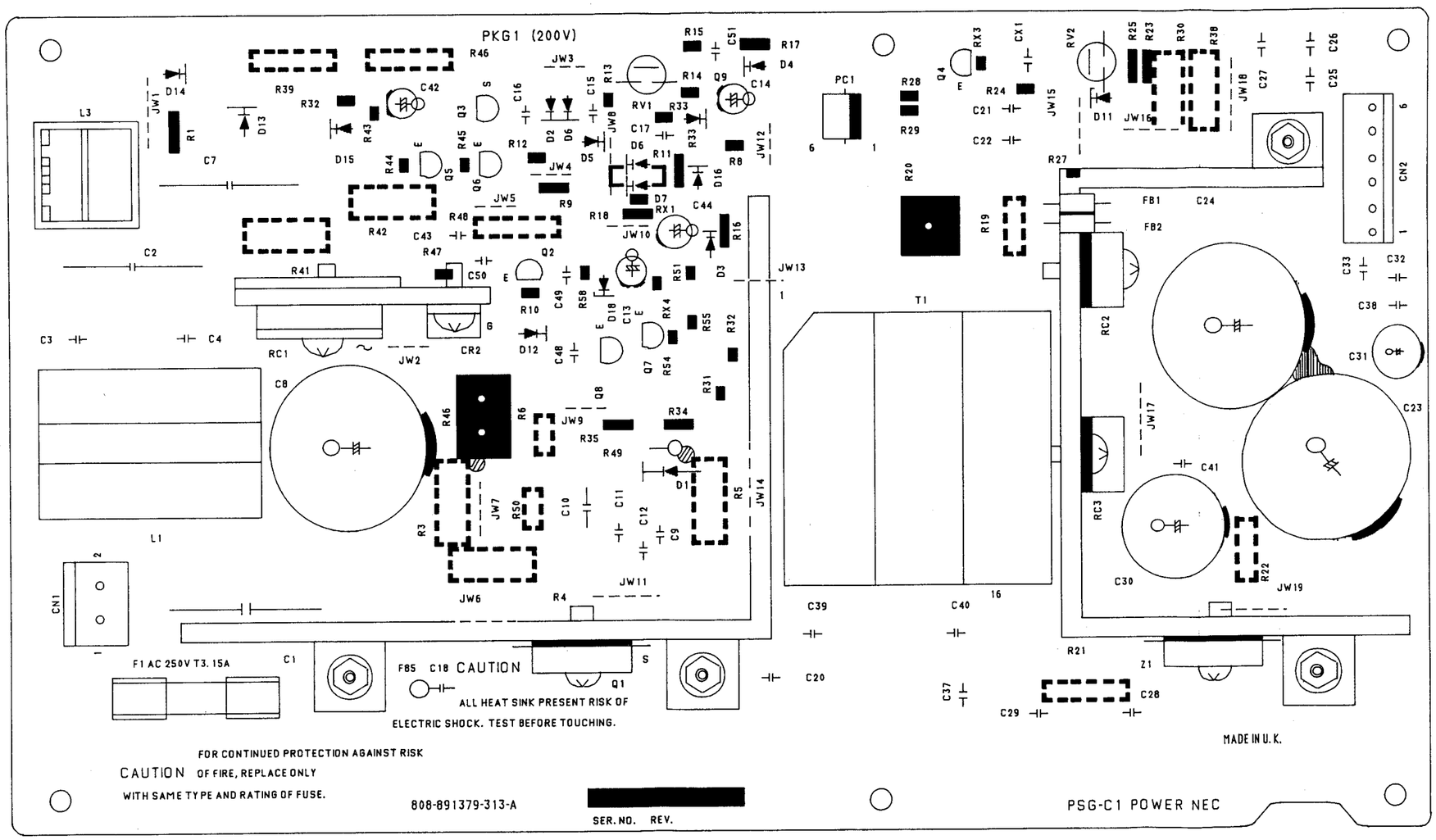


Figure 7-29 Power Board, PSG-CI POWER

Mother Board, G8KNHA (136-438082-001-A) - 1/2

COMPONENT DESIGNATION	PART NAME	PART NUMBER	Q'TY
3B	D70208GF-8	802-140236-103-A	1
5C	147883-002	802-147883-002-A	1
2C	HN62418FBC70	802-147328-801-A	1
4D	9346G	802-140501-101-A	1
1C, 2B	LS240	802-120202-005-A	2
2A	LM339DR	802-180380-101-A	1
6A	PST592DM	802-180292-305-A	1
3C, 3D	4C4256L-10	802-140494-210-A	2
3E	2MPROM Rework	136-227773-001-⌜⌟	1
XT1	CSA16.00Mx040 Ceramic Resonator	808-970112-027-A	1
D1 - D3	T-FRDCM10V4.0A	802-210047-002-A	3
D4 - D15	BZX84-C4V7	802-230036-015-A	12
Q2	BSR60/T1	802-250153-001-A	1
Q6, Q8	BCX70G/T1	802-250152-001-A	2
Q5	BC856/T1	802-250115-001-00	1
Q4, Q7	FA1A4M-T1B	802-250044-002-A	2
Q9	FN1L3N-T1B	802-250075-0	1
Q1, Q3	BCX18/T1	802-250154-001-A	2
Q10	BC847C/T1	802-250155-001-A	1
Z7, Z8	SMA4021	802-260171-001-0	2
Z1, Z2, Z4 - Z6, Z9	SMA4033	802-260171-002-0	6
Z3	SLA7024M	802-180549-001-0	1
Z10	SMA7029	802-180684-001-0	1
L4	BL02RN2-R62	802-840022-002-0	1
L1 - L3	ZJSC-1R0-103-TA	802-840100-002-A	3
F1, F2	ICP-N38T104	802-890028-005-A	2
CN1	PCN10N-32P-2.54DS	808-955329-104-A	1
CN3	VR-06	808-955247-806-A	1
CN2	ICP-H38	802-720076-138-0	1
CN4, CN7	FH11-12S-1.27-DSA	808-955311-012-A	2
CN5, CN6	FH11-20S-1.27DSA	808-955311-020-A	2
CN9	HR-06S (Natural)	808-955247-561-A	1
CN8	HR-06S (Black)	808-955247-563-A	1
C101, C102	2222 036 25339	802-410170-002-A	2
C103, C104	2222 036 90107	802-410170-003-A	2
C1 - C5, C16 - 21, C46 - C49, C58, C59	CCC10CH1H221J-T	802-410072-057-A	17
C27	CCC10CH1H101J-T	802-410072-049-A	1
C29, C31	CCC10CH1H300J-T	802-410072-036-A	2
C62, C63	CKC10B1H331K-T	802-410073-013-A	2
C6 - C15, C57, C64	CKC10B1H102K-T	802-410073-025-A	12
C55, C56, C66, C67	CKC10B1H222K-T	802-410073-033-A	4
C22 - C26, C30, C32 - C45, C50 - C53, C60, C61	CKC40B1H104K-T	802-410073-273-A	26
R301, R302	PR03 30R	802-310100-300-A	2
R304 - R312, R317 - R319	MCR100JZHJ2R2-T	802-310070-409-A	12
R313 - R316, R320, R323	MCR100JZHJ242-T	802-310070-482-A	8

Mother Board, G8KNHA (136-438082-001-A) - 2/2

COMPONENT DESIGNATION	PART NAME	PART NUMBER	Q'TY
R303	MCR50JZHJ301-T	802-310070-251-A	1
R3, R18, R136, R137	RC-01 330R	802-310103-801-A	4
R139	RC-01 18K	802-310103-802-A	1
R159	RC-01 30K	802-310103-803-A	1
R108	RC-11 390R	802-310103-391-A	1
R143	RC-11 620R	802-310103-621-A	1
R135	RC-11 1K	802-310103-102-A	1
R47, R140	RC-11 1K3	802-310103-132-A	2
R1, R141, R208	RC-11 3K	802-310103-302-A	3
R5 - R16, R54, R55, R59, R70, R98, R146, R158, R204, R206	RC-11 4K7	802-310103-472-A	25
R53	RC-11 1M	802-310103-105-A	1
R27, R28, R31 - R46, R52, R56, R57, R60 - R69, R71, R72, R74 - R88, R90 - R97, R99 - R107, R109 - R111, R113 - R117, R119, R122 - R126, R128 - R131, R177, R178, R183 - R197	RC-21 100R	802-310103-811-A	100
R17, R23 - R26, R29, R30, R73, R89	RC-21 560R	802-310103-812-A	9
R138, R144, R163 - R176, R179 - R182, R198 - R203	RC-21 1K6	802-310103-814-A	26
R58, R147 - R157, R160, R212, R214, R221, R222	RC-21 2K7	802-310103-815-A	17
R2, R4, R48, R112, R120, R121, R132 - R134, R142, R145, R161, R162, R205, R207	RC-21 10K	802-310103-816-A	15
R49 - R51, R215, R217, R223, R224	RC-21 47K	802-310103-817-A	7
R213	RC-12H 1K1	802-310103-704-A	1
R216	RC-12H 1K3	802-310103-705-A	1
R209	RC-12H 4K7	802-310103-707-A	1
R220	RC-12H 6K2	802-310103-708-A	1
R210	RC-12H 6K8	802-310103-709-A	1
R211	RC-12H 36K	802-310103-710-A	1
R218	RC-12H 43K	802-310103-711-A	1
(3E), (5E)	42000-3230	808-955367-032-A	2
(1)	G8KNH PWB	136-458082-B	1

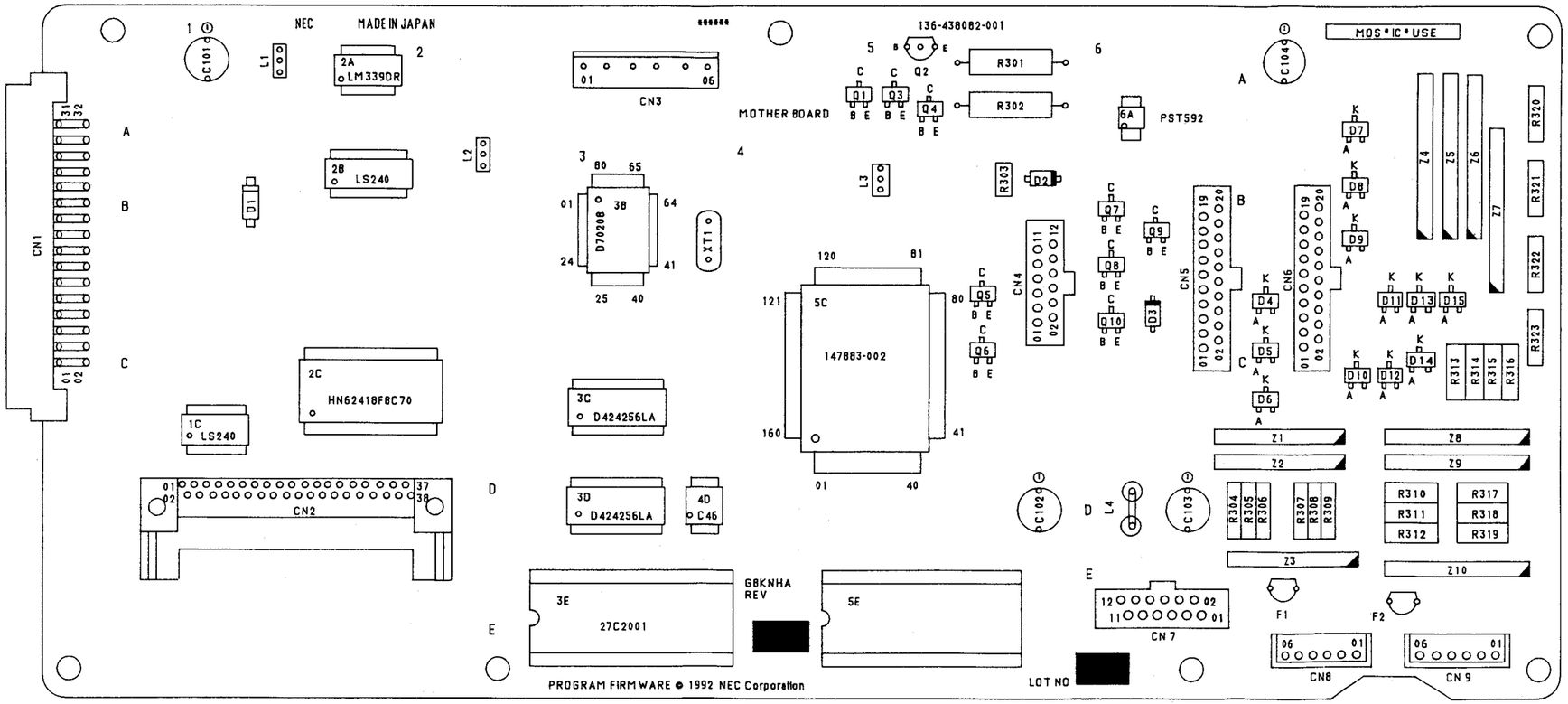


Figure 7-30 Mother Board, G8KNHA (Component Side)

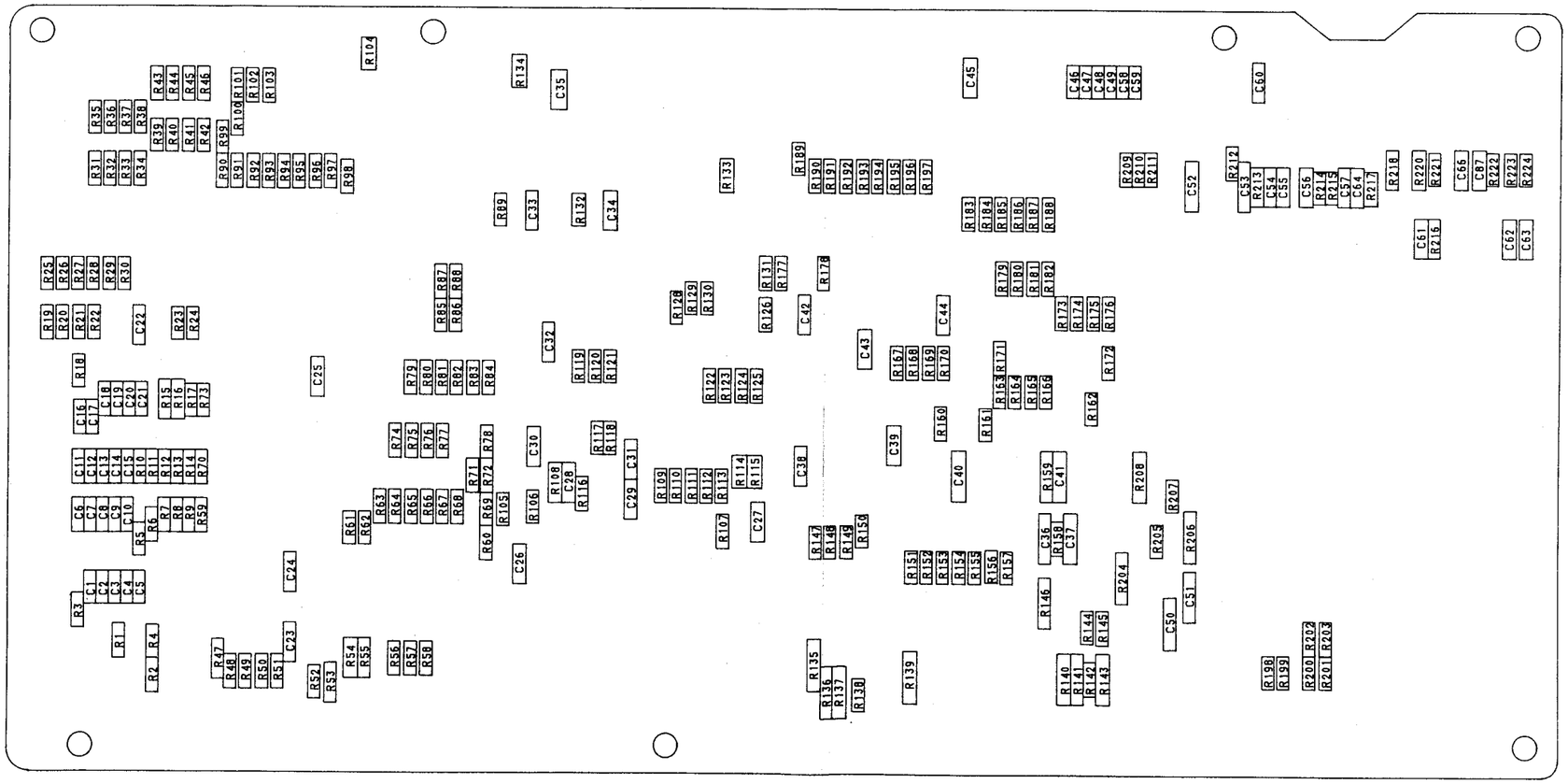


Figure 7-30 Mother Board, G8KNHA (Solder Side)

Connection Board, G8ESVA (136-436274-001-A)

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
C1, C3, C5	T-MC02CH1H331K	808-935501-001-A*	3
C4	T-MC02F1H104Z	808-935500-002-A*	1
C2, C6	T-MC02H1H101K	808-935500-010-A*	2
CN42	HR-04S, Natural	808-955247-541-A*	1
CN44	HR-012S, Natural	808-955247-591-A*	1
CN41	PCN10B-32S-2.54DS	808-955329-002-A*	1
CN45	Centronics Connector Assembly	136-843453-001-A*	1
J1, J2, J4, J6	Jumper Wire (16P)	133-381000-016-A*	4
J3, J8	Jumper Wire (12P)	133-381000-012-A*	2
J5, J7	Jumper Wire (8P)	133-381000-008-A*	2
(1)	G8ESV PCB	136-456274-D*	1

* Not available as a spare part.

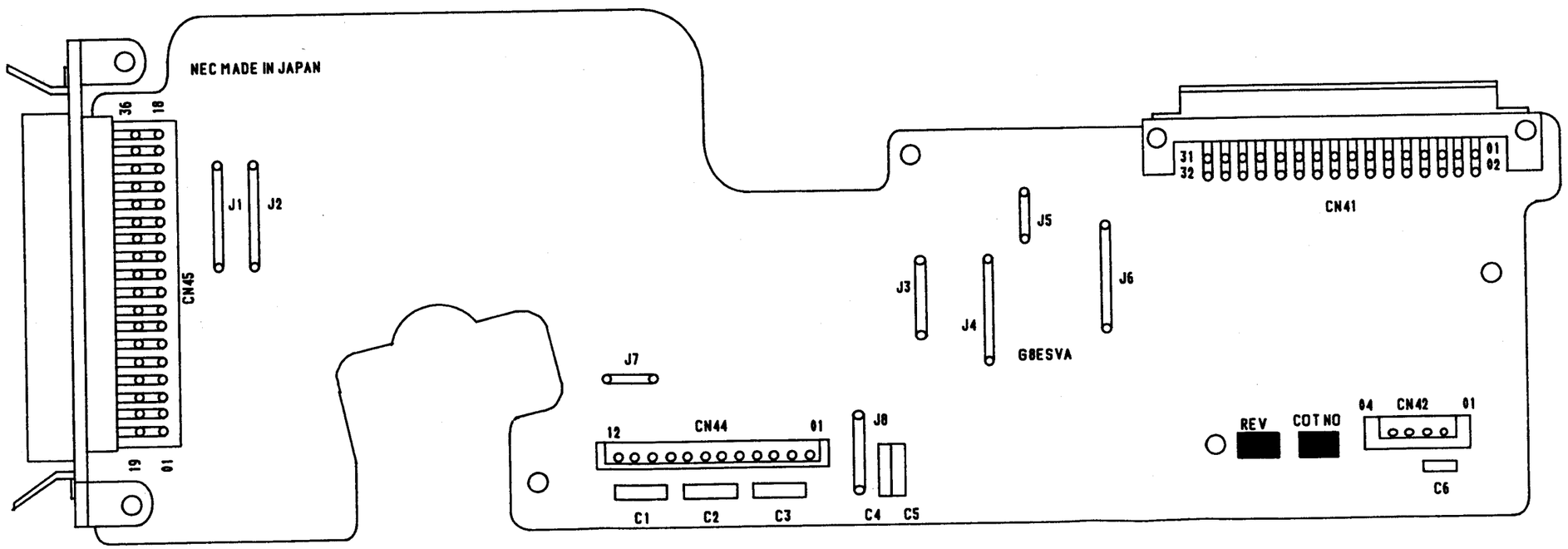


Figure 7-31 Connection Board, G8ESVA

RS-232C Kit (136-217741-001-A)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Serial I/F Case (U)	136-846899-001-A*	1
2	Serial I/F Case (L)	136-846900-001-A*	1
3	Set Screw	136-846884-001-A*	2
4	RS-232C Interface Board, G8ESW (See Figure 7-33 for breakdown)	136-436275-A	1
201	Screw, PCBTSx3x8x3GF	808-802172-308-0*	4
202	Screw, PCBTSx3x16x3GF	808-802172-316-0*	2

* Not available as a spare part.

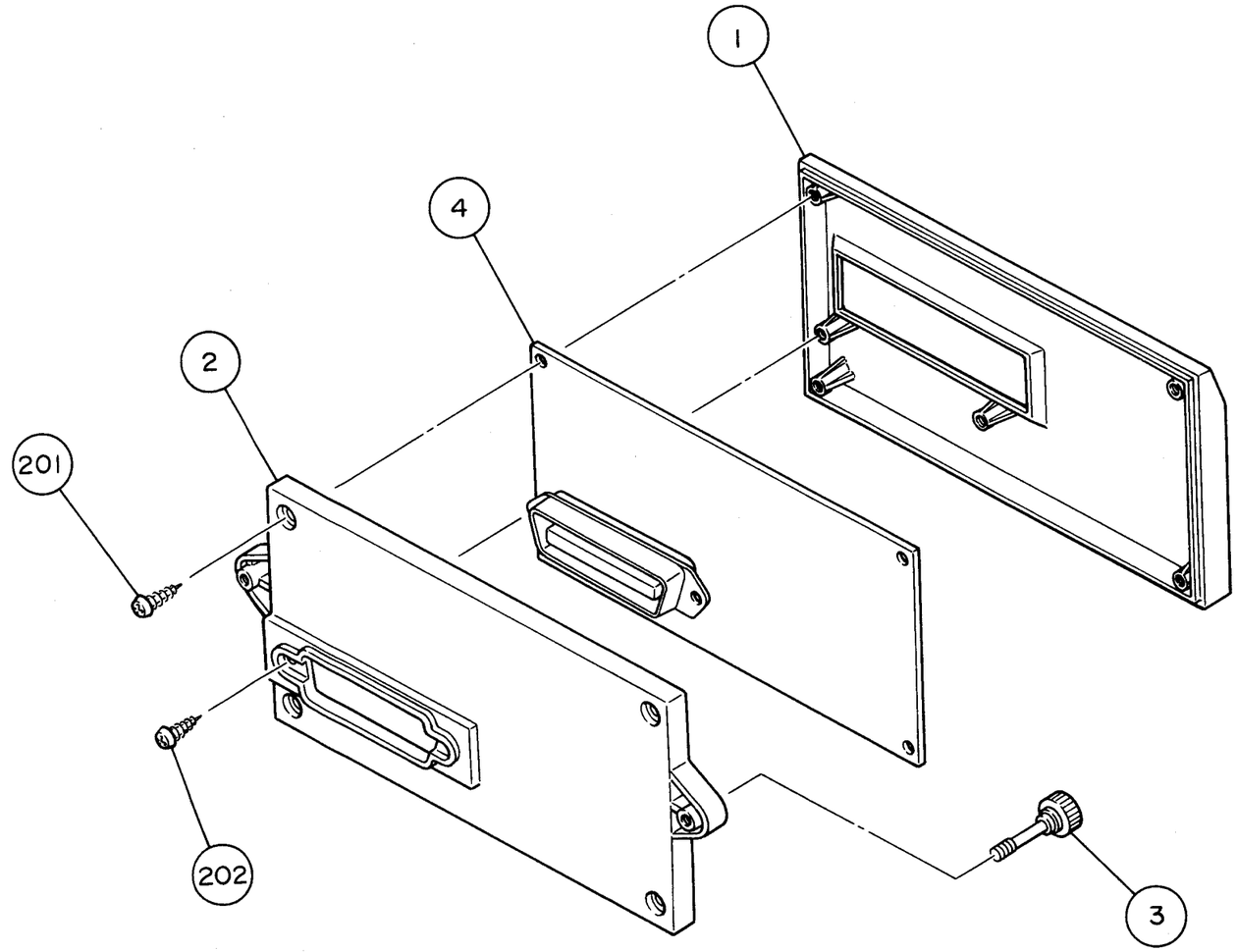
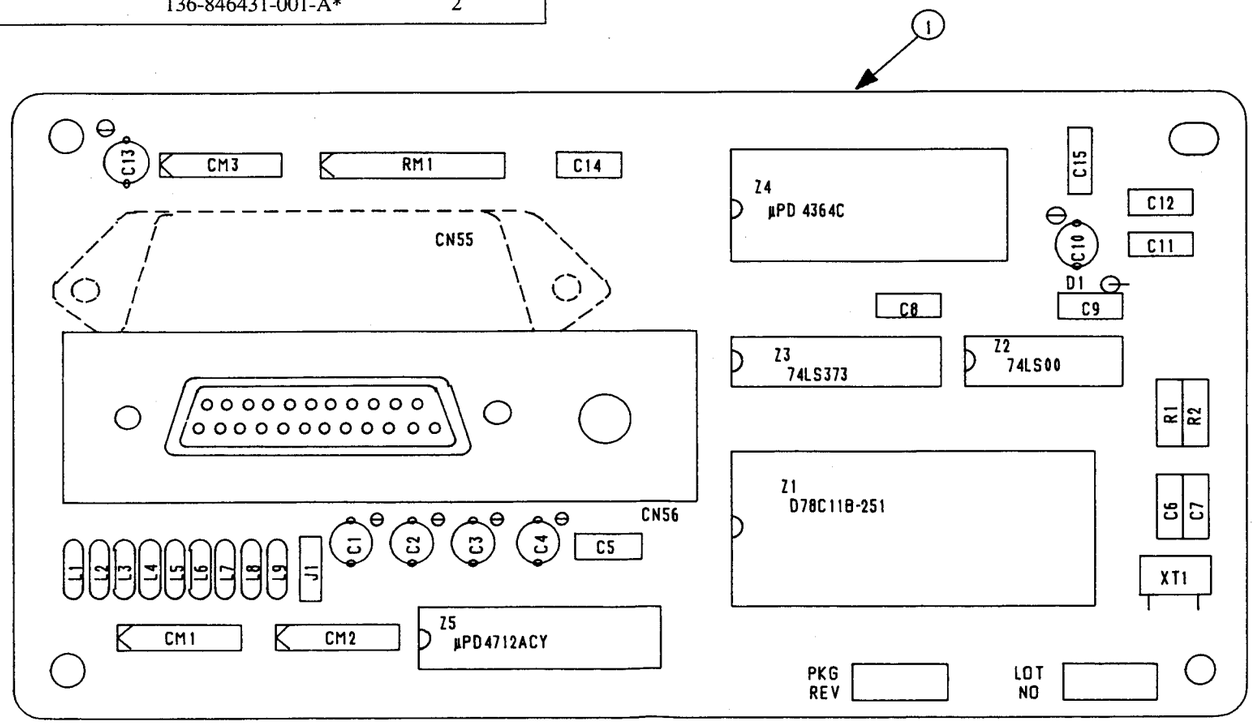


Figure 7-32 RS-232C Kit

RS-232C Interface Board, G8ESW (136-101509-002-A)

COMPONENT DESIGNATION	DESCRIPTION	PART NUMBER	Q'TY
Z1	D78C11G-251	802-140628-521-A	1
Z2	74LS00	808-907000-001-A	1
Z3	74LS373	808-907373-001-A	1
Z4	464 (150)	808-919407-150-A	1
Z5	D4712A	802-180453-002-A	1
D1	1S953	808-923009-531-A	1
R1	T-RF07Q203G	808-930300-017-A*	1
R2	T-RF07Q105G	808-930300-074-A*	1
RM1	RRS09BL472J (L)	802-190033-908-A*	1
L1-L9	ZBF503D-00	802-840043-002-A*	9
C6, C7	FMC02CH1H300K	808-935501-006-A*	2
C5, C8, C9, C11, C12, C14, C15	FMC02F1H104Z	808-935500-002-A*	6
C1-C4, C10, C13	T-CE16V22µF	808-935300-084-A*	6
CM1, CM2	IHC4-331KA	808-935569-001-A*	2
CM3	IHC4-222KA	808-935569-002-A*	1
XT1	CSA 7.37 MT	808-970112-011-A*	1
CN55	57-10360-13	802-710037-423-A*	1
CN56	Serial Connector Assembly	136-846428-001-A*	1
J1	Z-149-3P	808-955125-022-A*	1
(1).	G8ESW PCB	136-456275-D*	1
(22)	Spacer	136-846431-001-A*	2

* Not available as a spare part.



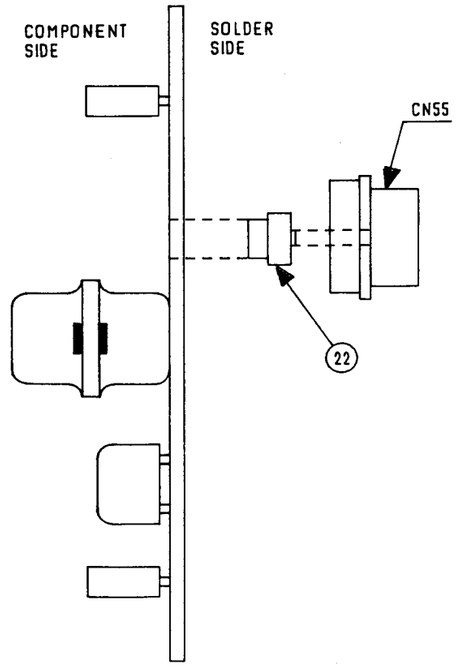


Figure 7-33 RS-232C Interface Board, G8ESW

Tractor Unit (S) (136-218470-001-0)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Side Frame (R) Assembly	136-789126-001-A	1
1-1	Side Frame (R) Subassembly	136-789127-001-A*	1
1-2	Lock Spring	136-789132-A	1
2	Side Frame (L) Assembly	136-789126-002-A	1
2-1	Side Frame (L) Subassembly	136-789127-002-A*	1
2-2	Lock Spring	136-789132-A	1
3	Tractor (R)	808-802351-001-A	1
4	Tractor (L)	808-802351-002-A	1
5	Center Guide	136-789138-A	1
6	Tractor Gear	136-789140-A	1
7	Drive Shaft (S)	136-789141-001-A*	1
8	Hold Shaft (S)	136-789142-001-A*	1
9	Tractor Knob	136-789162-001-A	1
10	Clutch Spring	136-789151-A*	1
11	Idle Gear 1	136-789143-A	1
12	Idle Gear 2	136-789144-A	1
13	Bushing	136-789152-A	2
14	Paper Net (S) Assembly	136-789153-001-A	1
14-1	Paper Net (S)	136-789154-001-A*	1
14-2	Rubber Cap	136-811830-A*	1
15	Side Cover (R)	136-789155-001-A	1
16	Side Cover (L)	136-789155-002-A	1
17	Washer	136-789149-A*	1
18	Frame Stay (SS)	136-789139-001-A*	1
19	Frame Stay (S)	136-789139-002-A*	1
201	E Ring E-42	803-010030-042-0*	1
202	E Ring E-50	803-010030-050-0*	1
203	Screw, PL-CPIMSx4x6x15BF	805-300004-006-0*	2
204	Screw, COFIMSx3x6x15BF	805-020003-006-0*	4
205	Screw, SL-CPIMSx3x8x15BF	805-310003-008-0*	4

* Not available as a spare part.

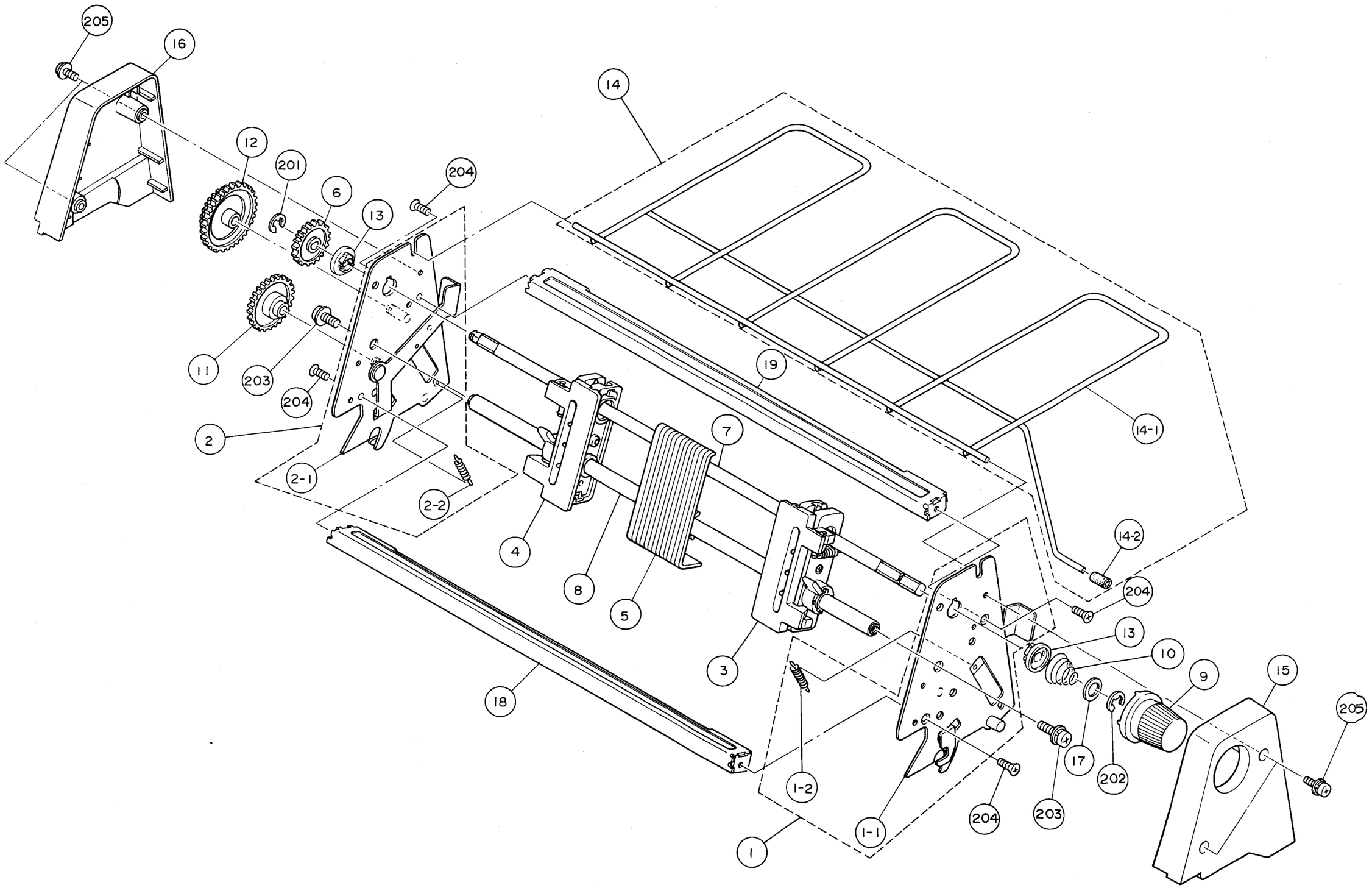


Figure 7-34 Tractor Unit (S)

Tractor Unit (L) (136-218470-501-0)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Side Frame (R) Assembly	136-789126-001-A	1
1-1	Side Frame (R) Subassembly	136-789127-001-A*	1
1-2	Lock Spring	136-789132-A	1
2	Side Frame (L) Assembly	136-789126-002-A	1
2-1	Side Frame (L) Subassembly	136-789127-002-A*	1
2-2	Lock Spring	136-789132-A	1
3	Tractor (R)	808-802351-001-A	1
4	Tractor (L)	808-802351-002-A	1
5	Center Guide	136-789138-A	1
6	Tractor Gear	136-789140-A	1
7	Drive Shaft (L)	136-789141-501-A*	1
8	Hold Shaft (L)	136-789142-501-A*	1
9	Tractor Knob	136-789162-001-A	1
10	Clutch Spring	136-789151-A*	1
11	Idle Gear 1	136-789143-A	1
12	Idle Gear 2	136-789144-A	1
13	Bushing	136-789152-A	2
14	Paper Net (L) Assembly	136-789153-501-A	1
14-1	Paper Net (L)	136-789154-501-A*	1
14-2	Rubber Cap	136-811830-A*	1
15	Side Cover (R)	136-789155-001-A	1
16	Side Cover (L)	136-789155-002-A	1
17	Washer	136-789149-A*	1
18	Frame Stay (LS)	136-789139-501-A*	1
19	Frame Stay (L)	136-789139-502-A*	1
201	E Ring E-42	803-010030-042-0*	1
202	E Ring E-50	803-010030-050-0*	1
203	Screw, PL-CPIMSx4x6x15BF	805-300004-006-0*	2
204	Screw, COFIMSx3x6x15BF	805-020003-006-0*	4
205	Screw, SL-CPIMSx3x8x15BF	805-310003-008-0*	4

* Not available as a spare part.

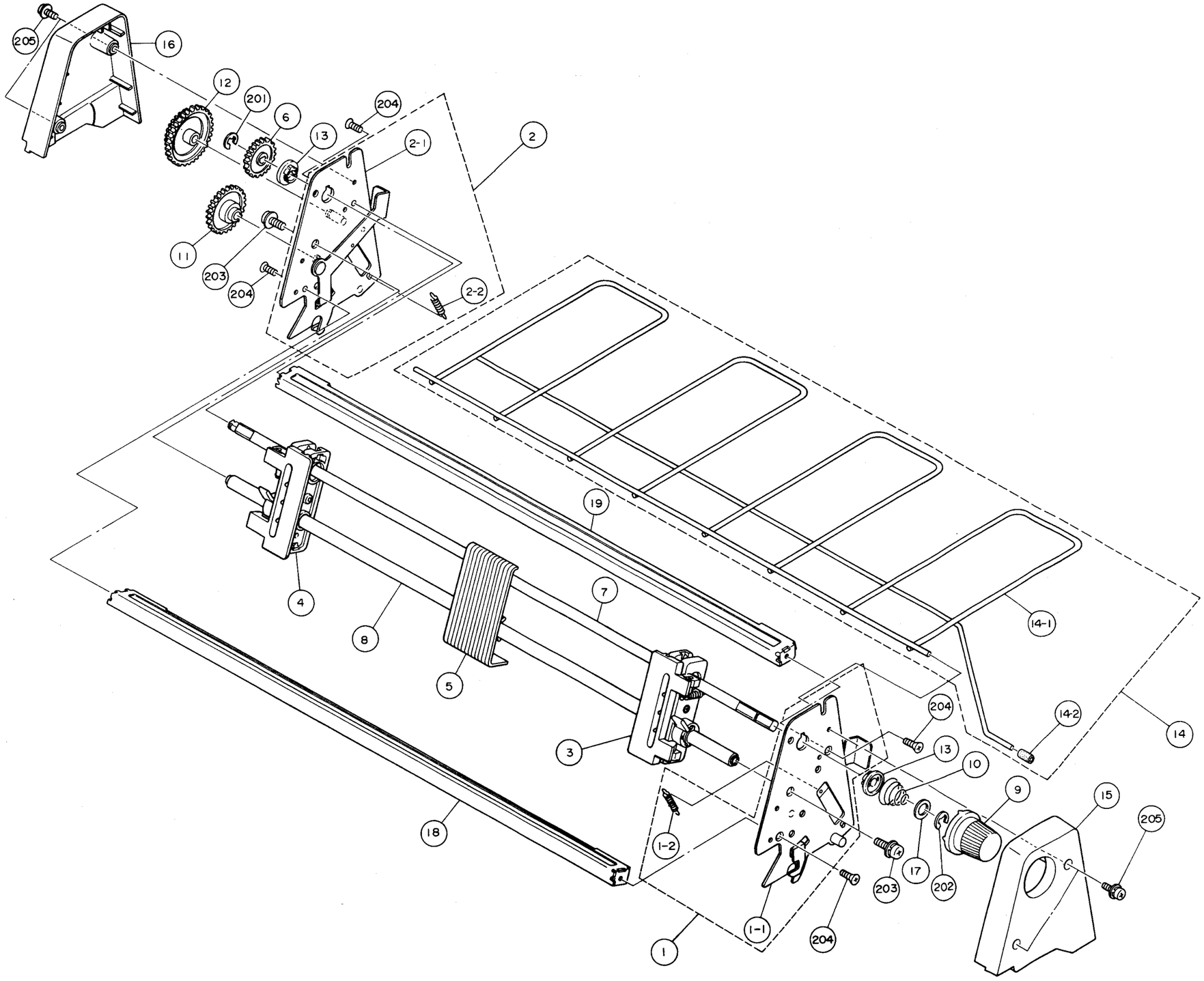
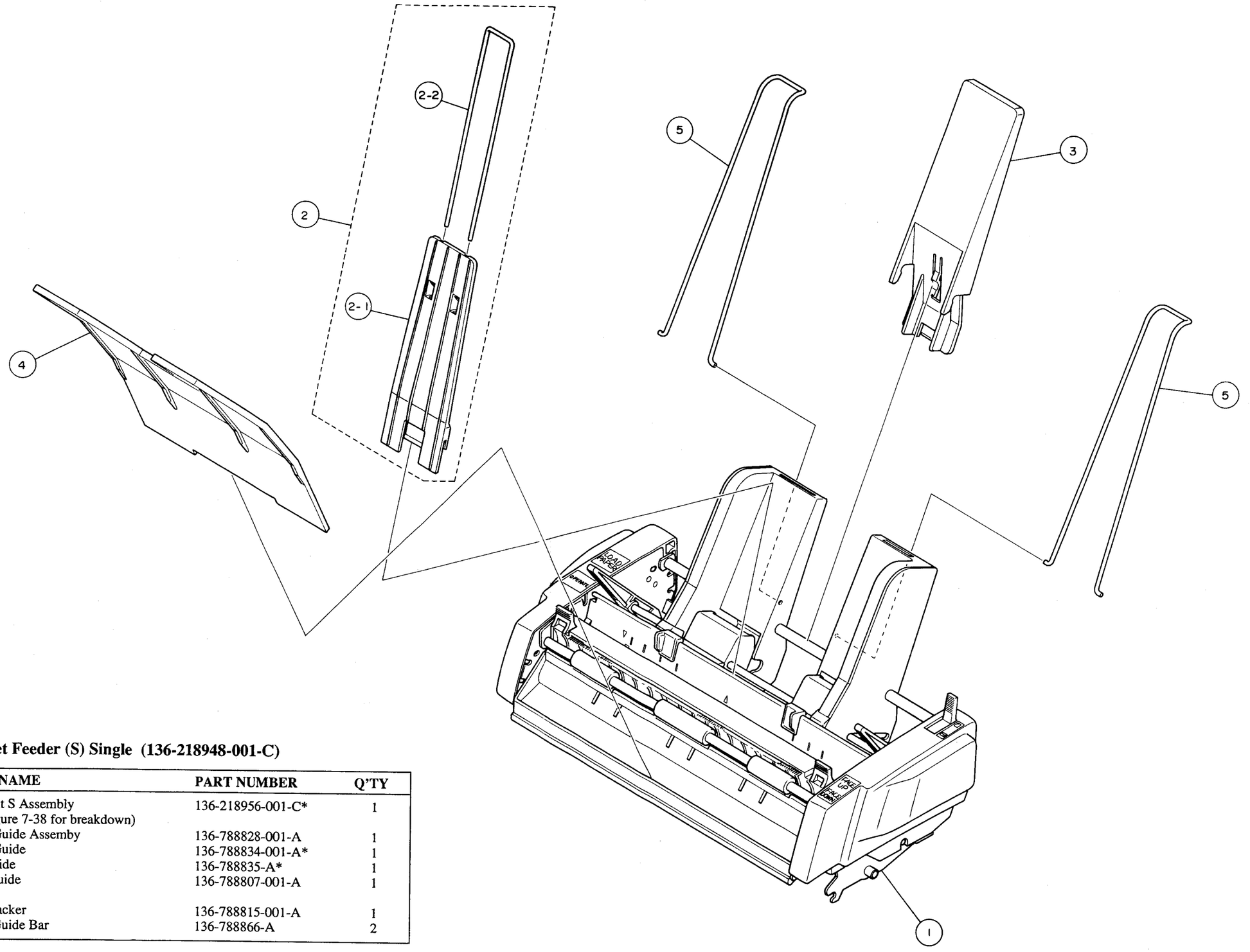


Figure 7-35 Tractor Unit (L)

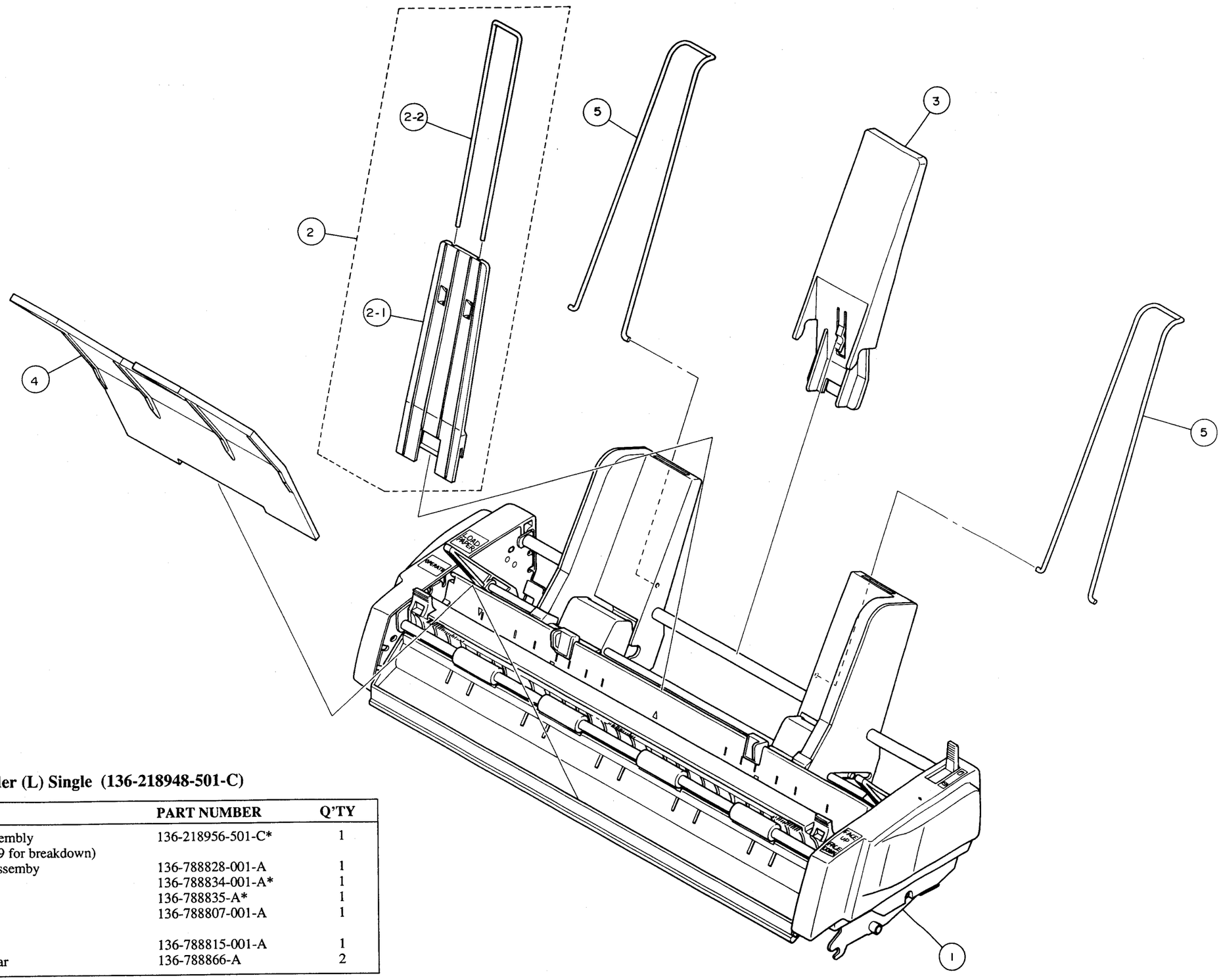


PSD Sheet Feeder (S) Single (136-218948-001-C)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Main Unit S Assembly (See Figure 7-38 for breakdown)	136-218956-001-C*	1
2	Stacker Guide Assemby	136-788828-001-A	1
2-1	Stacker Guide	136-788834-001-A*	1
2-2	Paper Guide	136-788835-A*	1
3	Center Guide	136-788807-001-A	1
4	Upper Stacker	136-788815-001-A	1
5	Hopper Guide Bar	136-788866-A	2

* Not available as a spare part.

Figure 7-36 PSD Sheet Feeder (S) Single



PSD Sheet Feeder (L) Single (136-218948-501-C)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Main Unit L Assembly (See Figure 7-39 for breakdown)	136-218956-501-C*	1
2	Stacker Guide Assemby	136-788828-001-A	1
2-1	Stacker Guide	136-788834-001-A*	1
2-2	Paper Guide	136-788835-A*	1
3	Center Guide	136-788807-001-A	1
4	Upper Stacker	136-788815-001-A	1
5	Hopper Guide Bar	136-788866-A	2

* Not available as a spare part.

Figure 7-37 PSD Sheet Feeder (L) Single

Main Unit S Assembly (136-218956-001-C) - 1/2

ITEM	PART NAME	PART NUMBER	Q'TY
1	Unit Sub (S) Assembly (See Figure 7-40 for breakdown)	136-788858-001-B*	1
2	Middle Guide S Assembly	136-788871-001-A	1
2-1	Middle Guide (S)	136-788860-001-B*	1
2-2	Side Guide	136-788849-001-A*	1
2-3	Side Guide	136-788849-002-A*	1
2-4	Middle Stay (S)	136-789760-001-A	1
3	Eject Guide (S) Assembly	136-788870-001-B	1
3-1	Eject Guide (S) Subassembly	136-789409-001-B*	1
3-2	Stacker Roller (S)	136-788903-A*	1
3-3	Bushing D	136-788901-001-A*	1
3-4	Bushing D	136-788901-002-A*	1
3-5	Eject Roller Gear	136-788843-A	1
3-201	E Ring (E-37)	803-010030-037-0*	1
4	Bottom Stacker S Assembly	136-788869-001-B	1
4-1	Bottom Stacker (S) Subassembly	136-789410-001-B*	1
4-2	Front Stay S	136-788905-A*	1
4-201	Screw, #2CBTSx3x6x3GF	805-230103-006-0*	2
5	Rear Stacker (S) Assembly	136-788822-001-A	1
5-1	Rear Stacker	136-788823-001-A*	1
5-2	E.S.D Brush	136-788824-001-A*	1
5-201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0*	2
6	Hopper Unit Assembly	136-788825-001-B	1
6-1	Hopper Base	136-788791-001-A*	1
6-2	Hopper Base	136-788791-002-A*	1
6-3	Hopper Cover	136-788797-001-A*	1
6-4	Hopper Cover	136-788797-002-A*	1
6-5	Separator	136-788792-001-A*	1
6-6	Separator	136-788792-002-A*	1
6-7	Hopper Plate Assembly	136-788794-001-A*	1
6-8	Hopper Plate Assembly	136-788794-002-A*	1
6-9	Separator Spring	136-788793-001-A*	2
6-10	Pressure Spring	136-788861-002-A*	2
6-11	Select Arm	136-788798-A*	2
6-12	Lock Piece	136-787516-001-A*	2
6-13	Hopper Release Bar	136-788817-001-A*	1
6-14	Hold Shaft	136-788809-001-A*	1
6-15	Pick Roller Cover	136-790905-001-A	1
6-16	Pick Roller Cover	136-790905-002-A	1
6-201	Screw, #2CBTSx3x8x3GF	805-230103-008-0	4
7	Feed Roller Gear Assembly	808-805313-001-A	1
8	Clutch Assembly	136-788800-001-B	1
8-1	Top Gear Assembly	136-788801-001-B	1
8-2	Middle Disk Assembly	136-788804-B	1
8-3	Base Gear 3	136-788889-A	1
9	Pick Roller Shaft	136-788876-001-A*	1
10	Eject Roller 2 (S)	136-788872-001-A*	1
11	Clutch Holder Subassembly	136-789408-A	1
12	Idle Gear A	136-788837-A	1
13	Idle Gear B	136-788838-A	1
14	Idle Gear C	136-788880-A	1

Main Unit S Assembly (136-218956-001-C) - 2/2

ITEM	PART NAME	PART NUMBER	Q'TY
15	Idle Gear D	136-788836-A	1
16	Idle Gear E	136-788910-A	1
17	Idle Gear F	136-788912-A	1
18	Idle Gear G	136-788811-A	1
19	Eject Roller Gear	136-788843-A	1
20	Pick Roller Gear	136-788841-A	1
21	Release Lever	136-788814-001-A	1
22	Release Lever	136-788814-002-A	1
23	Pick Roller	136-788811-001-A	1
24	Pick Roller	136-788811-002-A	1
25	Select Lever	136-788799-A	1
26	Eject Spring	136-788863-005-A*	2
27	Hold Bushing	136-788818-A	6
28	Side Cover L	136-788884-001-A	1
29	Side Cover R	136-788885-002-A	1
30	Nut Washer	136-789407-A	1
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0*	6
202	Screw, SL-CPIMSx3x10x15BF	805-310003-010-0*	2
203	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0*	1
204	E Ring (E-32)	803-010030-032-0*	3
205	E Ring (E-40)	803-010030-040-0*	1

* Not available as a spare part.

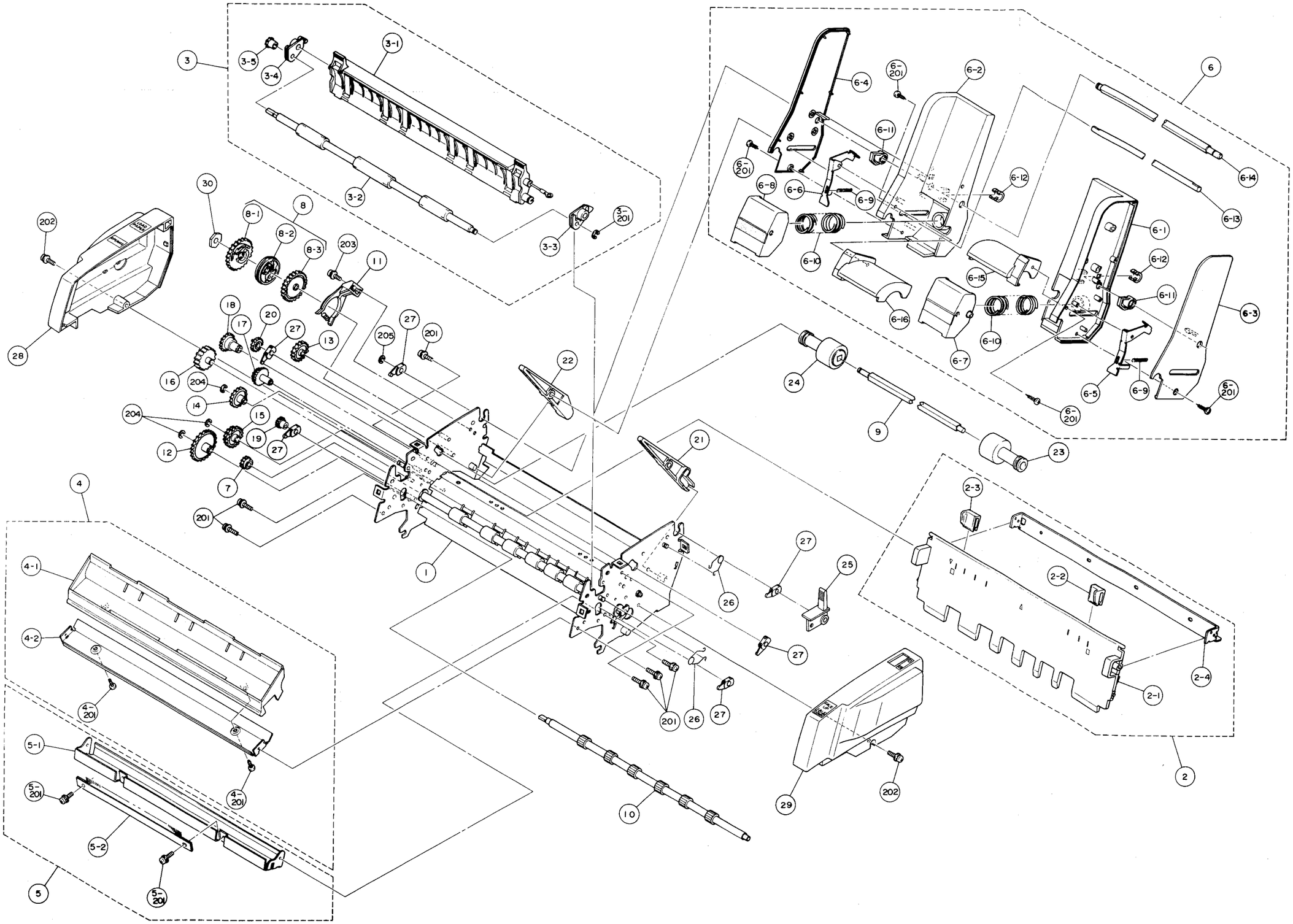


Figure 7-38 Main Unit S Assembly

Main Unit L Assembly (136-218956-501-C) - 1/2

ITEM	PART NAME	PART NUMBER	Q'TY
1	Unit Sub (L) Assembly (See Figure 7-41 for breakdown)	136-788858-501-B*	1
2	Middle Guide L Assembly	136-788871-501-A	1
2-1	Middle Guide (L)	136-788859-501-B*	1
2-2	Side Guide	136-788849-001-A*	1
2-3	Side Guide	136-788849-002-A*	1
2-4	Middle Stay (L)	136-789760-501-A	1
3	Eject Guide (L) Assembly	136-788870-501-B	1
3-1	Eject Guide (L) Subassembly	136-789409-501-B*	1
3-2	Stacker Roller (L)	136-788902-A*	1
3-3	Bushing D	136-788901-001-A*	1
3-4	Bushing D	136-788901-002-A*	1
3-5	Eject Roller Gear	136-788843-A	1
3-201	E Ring (E-37)	803-010030-037-0*	1
4	Bottom Stacker (L) Assembly	136-788869-501-B	1
4-1	Bottom Stacker (L) Subassembly	136-789410-501-B*	1
4-2	Front Stay L	136-788904-A*	1
4-201	Screw, #2CBTSx3x6x3GF	805-230103-006-0*	3
5	Rear Stacker (L) Assembly	136-788822-501-A	1
5-1	Rear Stacker	136-788823-501-A*	1
5-2	E.S.D Brush	136-788824-501-A*	1
5-201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0*	2
6	Hopper Unit Assembly	136-788825-501-B	1
6-1	Hopper Base	136-788791-001-A*	1
6-2	Hopper Base	136-788791-002-A*	1
6-3	Hopper Cover	136-788797-001-A*	1
6-4	Hopper Cover	136-788797-002-A*	1
6-5	Separator	136-788792-001-A*	1
6-6	Separator	136-788792-002-A*	1
6-7	Hopper Plate Assembly	136-788794-001-A*	1
6-8	Hopper Plate Assembly	136-788794-002-A*	1
6-9	Separator Spring	136-788793-001-A*	2
6-10	Pressure Spring	136-788861-002-A*	2
6-11	Select Arm	136-788798-A*	2
6-12	Lock Piece	136-787516-001-A*	2
6-13	Hopper Release Bar	136-788817-501-A*	1
6-14	Hold Shaft	136-788809-501-A	1
6-15	Pick Roller Cover	136-790905-001-A	1
6-16	Pick Roller Cover	136-790905-002-A	1
6-201	Screw, #2CBTSx3x8x3GF	805-230103-008-0	4
7	Feed Roller Gear Assembly	808-805313-001-A	1
8	Clutch Assembly	136-788800-001-B	1
8-1	Top Gear Assembly	136-788801-001-B	1
8-2	Middle Disk Assembly	136-788804-B	1
8-3	Base Gear 3	136-788889-A	1
9	Pick Roller Shaft	136-788876-501-A*	1
10	Eject Roller 2 (L)	136-788872-501-A*	1
11	Clutch Holder Assembly	136-789408-A	1
12	Idle Gear A	136-788837-A	1
13	Idle Gear B	136-788838-A	1
14	Idle Gear C	136-788880-A	1

Main Unit L Assembly (136-218956-501-C) - 2/2

ITEM	PART NAME	PART NUMBER	Q'TY
15	Idle Gear D	136-788836-A	1
16	Idle Gear E	136-788910-A	1
17	Idle Gear F	136-788912-A	1
18	Idle Gear G	136-788811-A	1
19	Eject Roller Gear	136-788843-A	1
20	Pick Roller Gear	136-788841-A	1
21	Release Lever	136-788814-001-A	1
22	Release Lever	136-788814-002-A	1
23	Pick Roller	136-788811-001-A	1
24	Pick Roller	136-788811-002-A	1
25	Select Lever	136-788799-A	1
26	Eject Spring	136-788863-005-A*	2
27	Hold Bushing	136-788818-A	6
28	Side Cover (L)	136-788884-001-A	1
29	Side Cover (R)	136-788885-002-A	1
30	Nut Washer	136-789407-A	1
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0*	6
202	Screw, SL-CPIMSx3x10x15BF	805-310003-010-0*	2
203	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0*	1
204	E Ring (E-32)	803-010030-032-0*	3
205	E Ring (E-40)	803-010030-040-0*	1

* Not available as a spare part.

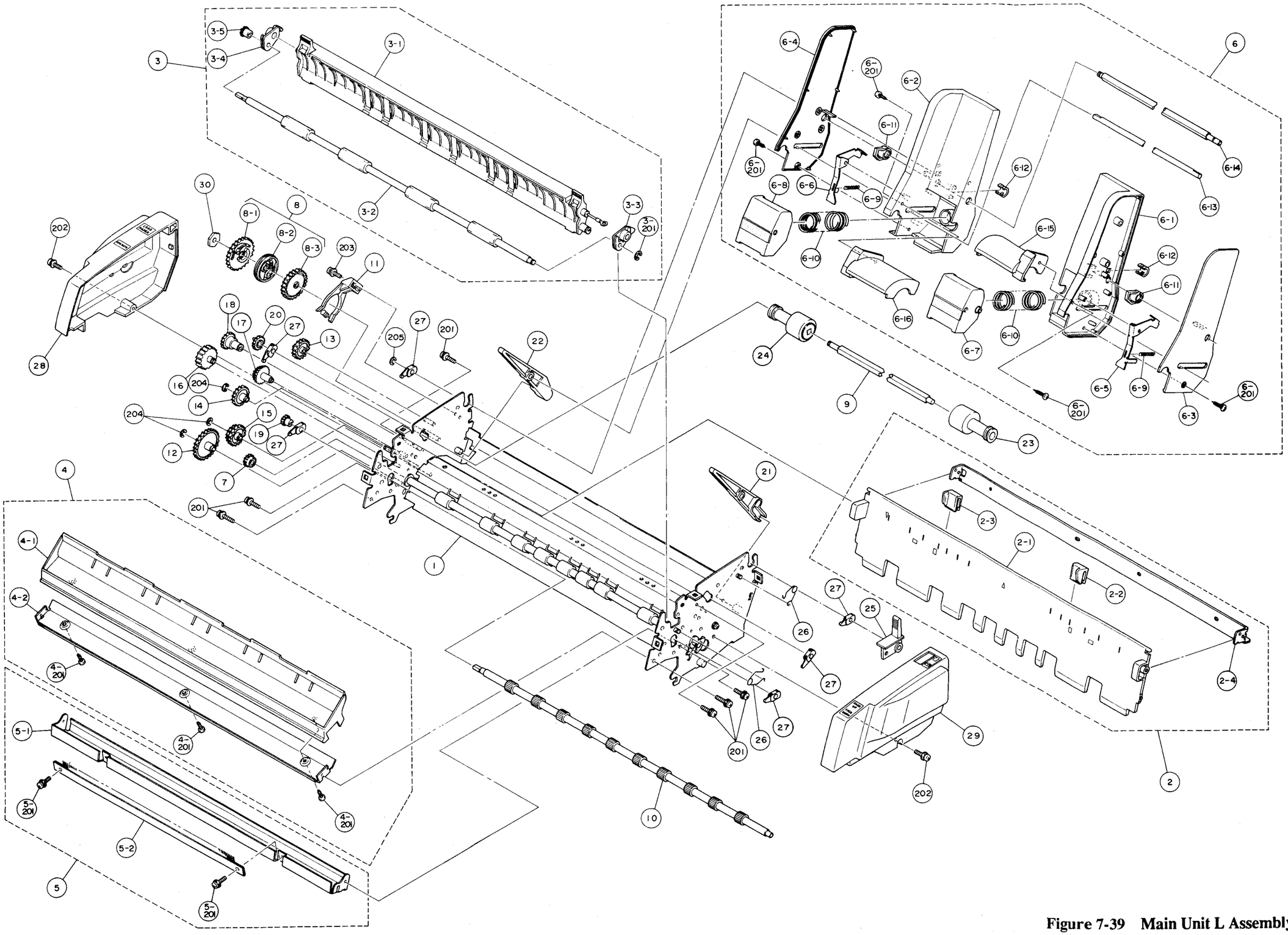
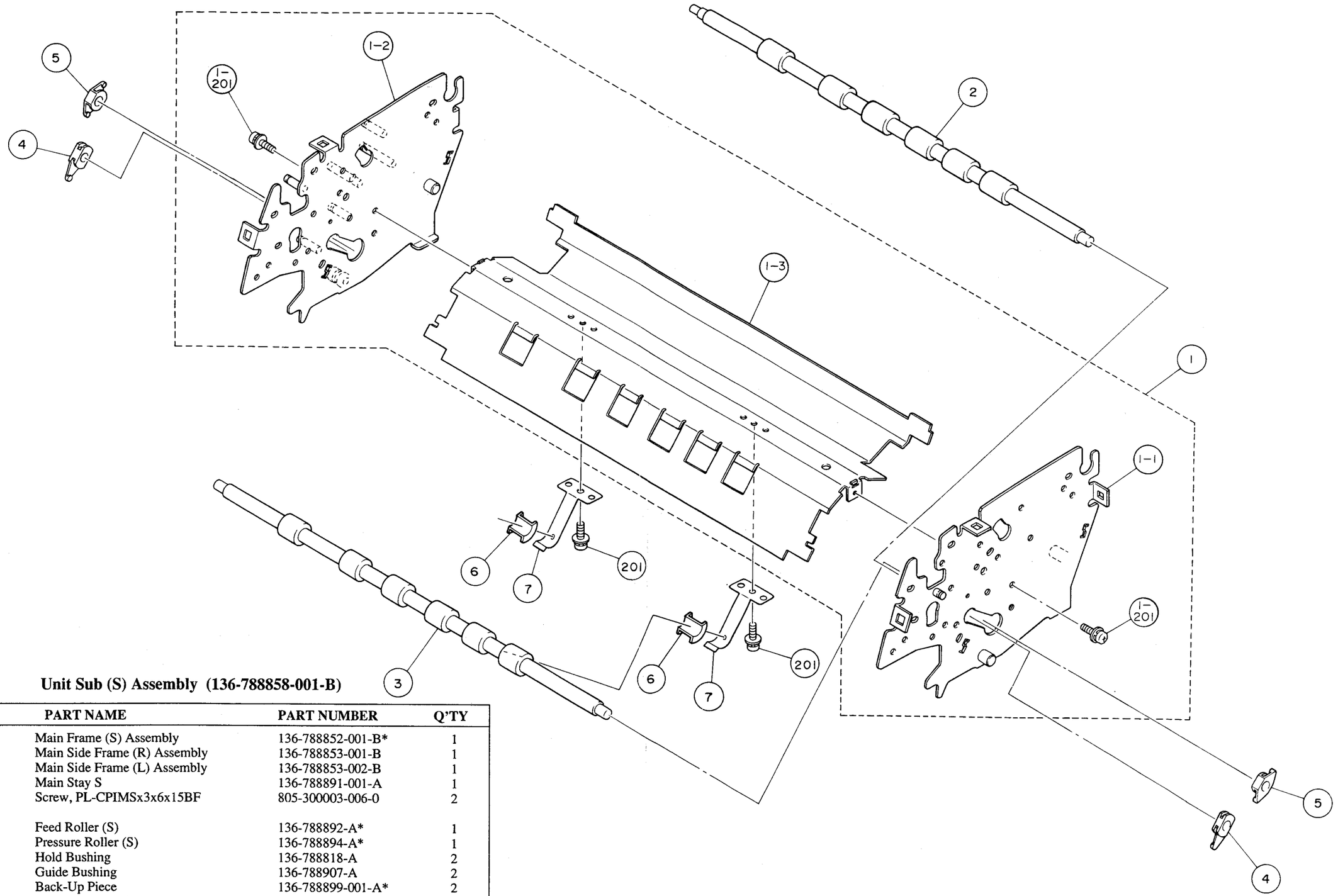


Figure 7-39 Main Unit L Assembly

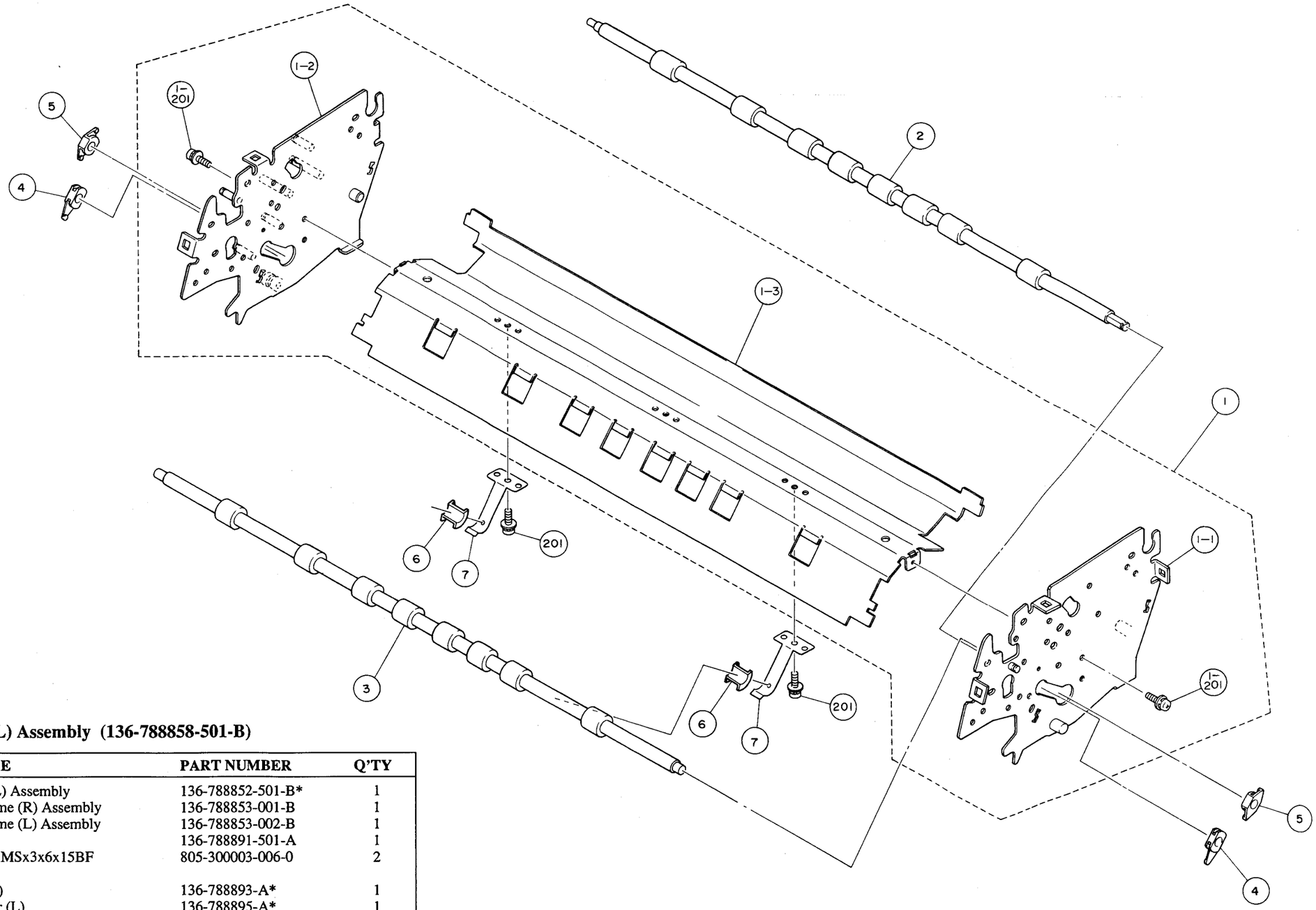


Unit Sub (S) Assembly (136-788858-001-B)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Main Frame (S) Assembly	136-788852-001-B*	1
1-1	Main Side Frame (R) Assembly	136-788853-001-B	1
1-2	Main Side Frame (L) Assembly	136-788853-002-B	1
1-3	Main Stay S	136-788891-001-A	1
1-201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	2
2	Feed Roller (S)	136-788892-A*	1
3	Pressure Roller (S)	136-788894-A*	1
4	Hold Bushing	136-788818-A	2
5	Guide Bushing	136-788907-A	2
6	Back-Up Piece	136-788899-001-A*	2
7	Back-Up Spring	136-788821-004-A*	2
201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0*	2

* Not available as a spare part.

Figure 7-40 Unit Sub (S) Assembly



Unit Sub (L) Assembly (136-788858-501-B)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Main Frame (L) Assembly	136-788852-501-B*	1
1-1	Main Side Frame (R) Assembly	136-788853-001-B	1
1-2	Main Side Frame (L) Assembly	136-788853-002-B	1
1-3	Main Stay S	136-788891-501-A	1
1-201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0	2
2	Feed Roller (L)	136-788893-A*	1
3	Pressure Roller (L)	136-788895-A*	1
4	Hold Bushing	136-788818-A	2
5	Guide Bushing	136-788907-A	2
6	Back-Up Piece	136-788899-001-A*	2
7	Back-Up Spring	136-788821-004-A*	2
201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0*	2

* Not available as a spare part.

Figure 7-41 Unit Sub (L) Assembly

PSD Sheet Feeder (S) 2 Bin (136-218949-001-D)

ITEM	PART NAME	PART NUMBER	Q'TY
1	2 Bin Main Unit Assembly (See Figure 7-44 for breakdown)	136-218957-501-D*	1
2	Stacker Guide Assembly	136-788828-001-A	1
2-1	Stacker Guide	136-788834-001-A*	1
2-2	Paper Guide	136-788835-A*	1
3	Center Guide	136-788807-001-A	2
4	Upper Stacker	136-788815-001-A	1
5	Hopper Guide Bar	136-788866-A	4

* Not available as a spare part.

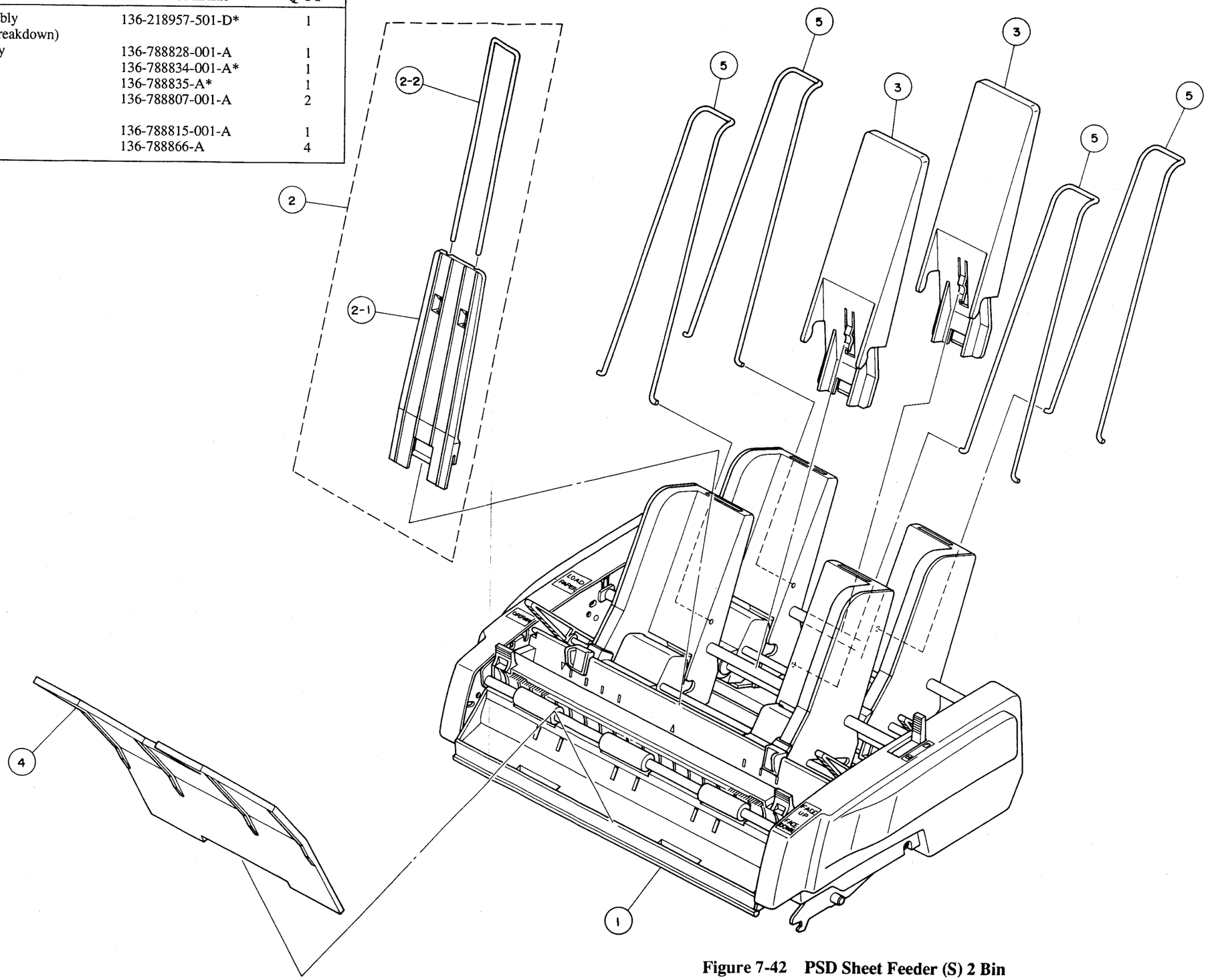


Figure 7-42 PSD Sheet Feeder (S) 2 Bin

PSD Sheet Feeder (L) 2 Bin (136-218949-501-D)

ITEM	PART NAME	PART NUMBER	Q'TY
1	2 Bin Main Unit Assembly (See Figure 7-45 for breakdown)	136-218957-501-D*	1
2	Stacker Guide Assembly	136-788828-001-A	1
2-1	Stacker Guide	136-788834-001-A*	1
2-2	Paper Guide	136-788835-A*	1
3	Center Guide	136-788807-001-A	2
4	Upper Stacker	136-788815-001-A	1
5	Hopper Guide Bar	136-788866-A	4

* Not available as a spare part.

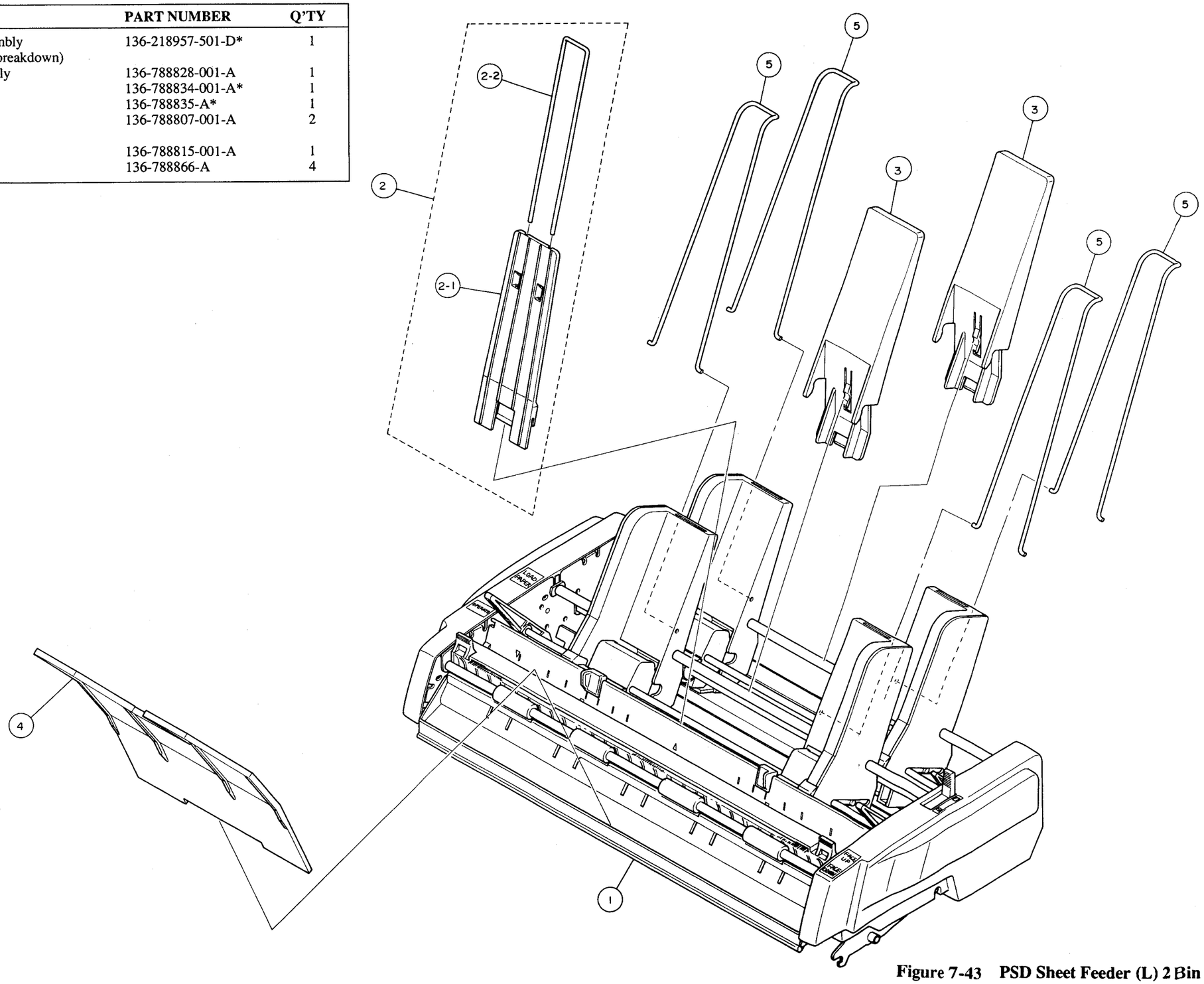


Figure 7-43 PSD Sheet Feeder (L) 2 Bin

2 Bin Main Unit Assembly (136-218957-001-D) - 1/2

ITEM	PART NAME	PART NUMBER	Q'TY
1	2 Bin Unit Subassembly (See Figure 7-46 for breakdown)	136-788855-001-C*	1
2	Middle Guide S Assembly	136-788871-001-A	1
2-1	Middle Guide (S)	136-788860-001-B*	1
2-2	Side Guide	136-788849-001-A*	1
2-3	Side Guide	136-788849-002-A*	1
2-4	Middle Stay (S)	136-789760-001-A	1
3	Eject Guide S Assembly	136-788870-001-B	1
3-1	Eject Guide (S) Subassembly	136-789409-001-B*	1
3-2	Stacker Roller (S)	136-788903-A*	1
3-3	Bushing D	136-788901-001-A*	1
3-4	Bushing D	136-788901-002-A*	1
3-5	Eject Roller Gear	136-788843-A	1
3-201	E Ring (E-37)	803-010030-037-0*	1
4	Bottom Stacker (S) Assembly	136-788869-001-B	1
4-1	Bottom Stacker (S) Subassembly	136-789410-001-B*	1
4-2	Front Stay (S)	136-788905-A*	1
4-201	Screw, #2CBTSx3x6x3GF	805-230103-006-0*	2
5	Rear Stacker (S) Assembly	136-788822-001-A	1
5-1	Rear Stacker	136-788823-001-A*	1
5-2	E.S.D Brush (S)	136-788824-001-A*	1
5-201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0*	2
6	Hopper Unit Assembly	136-788825-001-B	1
6-1	Hopper Base	136-788791-001-A*	1
6-2	Hopper Base	136-788791-002-A*	1
6-3	Hopper Cover	136-788797-001-A*	1
6-4	Hopper Cover	136-788797-002-A*	1
6-5	Separator	136-788792-001-A*	1
6-6	Separator	136-788792-002-A*	1
6-7	Hopper Plate Assembly	136-788794-001-A*	1
6-8	Hopper Plate Assembly	136-788794-002-A*	1
6-9	Separator Spring	136-788793-001-A*	2
6-10	Pressure Spring	136-788861-002-A*	2
6-11	Select Arm	136-788798-A*	2
6-12	Lock Piece	136-787516-001-A*	2
6-13	Hopper Release Bar	136-788817-001-A*	1
6-14	Hold Shaft	136-788809-001-A*	1
6-15	Pick Roller Cover	136-790905-001-A	1
6-16	Pick Roller Cover	136-790905-002-A	1
6-201	Screw, #2CBTSx3x8x3GF	805-230103-008-0	4
7	Hopper Unit 2 Assembly	136-788826-001-B	1
7-1	Hopper Base	136-788791-001-A*	1
7-2	Hopper Base	136-788791-002-A*	1
7-3	Hopper Cover	136-788797-001-A*	1
7-4	Hopper Cover	136-788797-002-A*	1
7-5	Separator	136-788792-001-A*	1
7-6	Separator	136-788792-002-A*	1
7-7	Hopper Plate Assembly	136-788794-001-A*	1
7-8	Hopper Plate Assembly	136-788794-002-A*	1
7-9	Separator Spring	136-788793-001-A*	2
7-10	Pressure Spring	136-788861-002-A*	2

2 Bin Main Unit Assembly (136-218957-001-D) - 2/2

ITEM	PART NAME	PART NUMBER	Q'TY
7-11	Lock Piece	136-787516-001-A*	2
7-12	Hopper Release Bar	136-788817-001-A*	1
7-13	Hold Shaft 2	136-788816-001-A*	1
7-14	Pick Roller Cover	136-790905-001-A	1
7-15	Pick Roller Cover	136-790905-002-A	1
7-201	Screw, #2CBTSx3x8x3GF	805-230103-008-0	4
8	Feed Roller Gear Assembly	808-805313-001-A	1
9	Clutch Assembly	136-788800-001-B	1
9-1	Top Gear Assembly	136-788801-001-B	1
9-2	Middle Disk Assembly	136-788804-B	1
9-3	Base Gear 3	136-788889-A	1
10	Clutch Assembly	136-788800-002-B	1
10-1	Top Gear Assembly	136-788801-002-B	1
10-2	Middle Disk Assembly	136-788804-B	1
10-3	Base Gear 3	136-788889-A	1
11	Pick Roller Shaft (S)	136-788876-001-A*	2
12	Eject Roller 2 (S)	136-788872-001-A*	1
13	Clutch Holder Subassembly	136-789408-A	2
14	Idle Gear A	136-788837-A	1
15	Idle Gear B	136-788838-A	2
16	Idle Gear C	136-788880-A	1
17	Idle Gear D	136-788836-A	1
18	Idle Gear E	136-788910-A	1
19	Idle Gear F	136-788912-A	1
20	Idle Gear J Assembly	136-789414-B	2
21	Idle Gear H	136-788913-B	2
22	Eject Roller Gear	136-788843-A	1
23	Pick Roller Gear	136-788841-A	2
24	Release Lever R	136-788814-001-A	2
25	Release Lever L	136-788814-002-A	2
26	Pick Roller	136-788811-001-A	2
27	Pick Roller	136-788811-002-A	2
28	Select Lever	136-788799-A 1	1
29	Eject Spring	136-788863-005-A*	2
30	Hold Bushing	136-788818-A	8
31	Second Side Cover L	136-788886-001-A	1
32	Second Side Cover R	136-788887-002-A	1
33	Nut Washer	136-789407-A	2
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0*	6
202	Screw, SL-CPIMSx3x10x15BF	805-310003-010-0*	2
203	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0*	2
204	Screw, PL-CPIMSx4x8x15BF	805-300004-008-0*	2
205	E Ring (E-32)	803-010030-032-0*	3
206	E Ring (E-30)	803-814783-030-A*	2
207	E Ring (E-40)	803-010030-040-0*	1

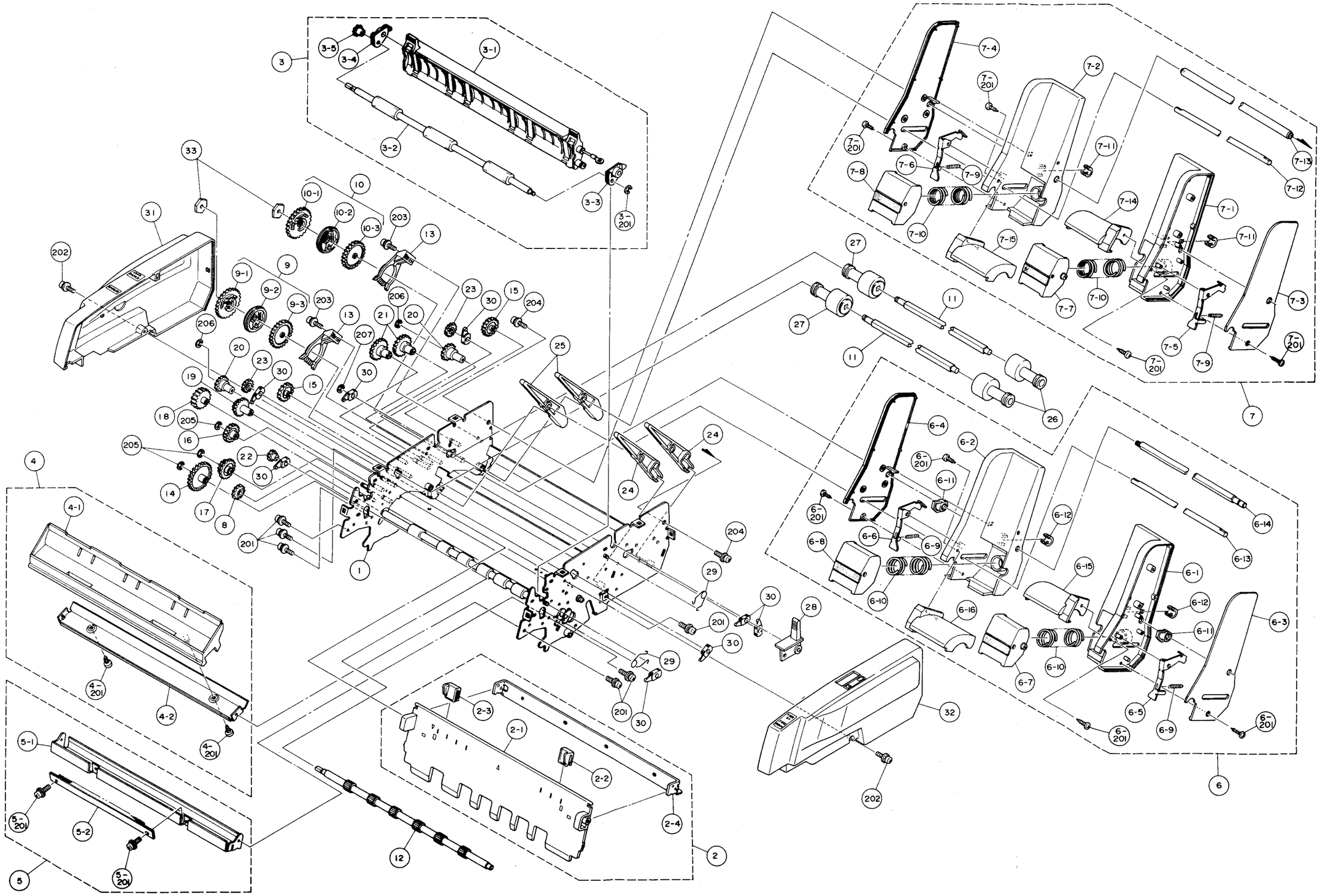


Figure 7-44 2 Bin Main Unit Assembly

2 Bin Main Unit Assembly (136-218957-501-D) - 1/2

ITEM	PART NAME	PART NUMBER	Q'TY
1	2 Bin Unit Subassembly (See Figure 7-47 for breakdown)	136-788855-501-D*	1
2	Middle Guide L Assembly	136-788871-501-A	1
2-1	Middle Guide (L)	136-788859-501-B*	1
2-2	Side Guide	136-788849-001-A*	1
2-3	Side Guide	136-788849-002-A*	1
2-4	Middle Stay (L)	136-789760-501-A	1
3	Eject Guide L Assembly	136-788870-501-B	1
3-1	Eject Guide (L) Subassembly	136-789409-501-B*	1
3-2	Stacker Roller (L)	136-788903-A*	1
3-3	Bushing D	136-788901-001-A*	1
3-4	Bushing D	136-788901-002-A*	1
3-5	Eject Roller Gear	136-788843-A	1
3-201	E Ring (E-37)	803-010030-037-0*	1
4	Bottom Stacker (L) Assembly	136-788869-501-B	1
4-1	Bottom Stacker (L) Subassembly	136-789410-501-B*	1
4-2	Front Stay (L)	136-788905-A*	1
4-201	Screw, #2CBTSx3x6x3GF	805-230103-006-0*	3
5	Rear Stacker (L) Assembly	136-788822-501-A	1
5-1	Rear Stacker	136-788823-501-A*	1
5-2	E.S.D Brush (L)	136-788824-501-A*	1
5-201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0*	2
6	Hopper Unit Assembly	136-788825-501-B	1
6-1	Hopper Base	136-788791-001-A*	1
6-2	Hopper Base	136-788791-002-A*	1
6-3	Hopper Cover	136-788797-001-A*	1
6-4	Hopper Cover	136-788797-002-A*	1
6-5	Separator	136-788792-001-A*	1
6-6	Separator	136-788792-002-A*	1
6-7	Hopper Plate Assembly	136-788794-001-A*	1
6-8	Hopper Plate Assembly	136-788794-002-A*	1
6-9	Separator Spring	136-788793-001-A*	2
6-10	Pressure Spring	136-788861-002-A*	2
6-11	Select Arm	136-788798-A*	2
6-12	Lock Piece	136-787516-001-A*	2
6-13	Hopper Release Bar	136-788817-501-A*	1
6-14	Hold Shaft	136-788809-501-A*	1
6-15	Pick Roller Cover	136-790905-001-A	1
6-16	Pick Roller Cover	136-790905-002-A	1
6-201	Screw, #2CBTSx3x8x3GF	805-230103-008-0	4
7	Hopper Unit 2 Assembly	136-788826-001-B	1
7-1	Hopper Base	136-788791-001-A*	1
7-2	Hopper Base	136-788791-002-A*	1
7-3	Hopper Cover	136-788797-001-A*	1
7-4	Hopper Cover	136-788797-002-A*	1
7-5	Separator	136-788792-001-A*	1
7-6	Separator	136-788792-002-A*	1
7-7	Hopper Plate Assembly	136-788794-001-A*	1
7-8	Hopper Plate Assembly	136-788794-002-A*	1
7-9	Separator Spring	136-788793-001-A*	2
7-10	Pressure Spring	136-788861-002-A*	2

2 Bin Main Unit Assembly (136-218957-501-D) - 2/2

ITEM	PART NAME	PART NUMBER	Q'TY
7-11	Lock Piece	136-787516-001-A*	2
7-12	Hopper Release Bar	136-788817-501-A*	1
7-13	Hold Shaft 2	136-788816-501-A*	1
7-14	Pick Roller Cover	136-790905-001-A	1
7-15	Pick Roller Cover	136-790905-002-A	1
7-201	Screw, #2CBTSx3x8x3GF	805-230103-008-0	4
8	Feed Roller Gear Assembly	808-805313-001-A	1
9	Clutch Assembly	136-788800-001-B	1
9-1	Top Gear Assembly	136-788801-001-B	1
9-2	Middle Disk Assembly	136-788804-B	1
9-3	Base Gear 3	136-788889-A	1
10	Clutch Assembly	136-788800-002-B	1
10-1	Top Gear Assembly	136-788801-002-B	1
10-2	Middle Disk Assembly	136-788804-B	1
10-3	Base Gear 3	136-788889-A	1
11	Pick Roller Shaft (L)	136-788876-501-A*	2
12	Eject Roller 2 (L)	136-788872-501-A*	1
13	Clutch Holder Subassembly	136-789408-A	2
14	Idle Gear A	136-788837-A	1
15	Idle Gear B	136-788838-A	2
16	Idle Gear C	136-788880-A	1
17	Idle Gear D	136-788836-A	1
18	Idle Gear E	136-788910-A	1
19	Idle Gear F	136-788912-A	1
20	Idle Gear J Assembly	136-788914-B	2
21	Idle Gear H	136-788913-B	2
22	Eject Roller Gear	136-788843-A	1
23	Pick Roller Gear	136-788814-A	2
24	Release Lever R	136-788814-001-A	2
25	Release Lever L	136-788814-002-A	2
26	Pick Roller	136-788811-001-A	2
27	Pick Roller	136-788811-002-A	2
28	Select Lever	136-788799-A	1
29	Eject Spring	136-788863-005-A*	2
30	Hold Bushing	136-788818-A	8
31	Second Side Cover L	136-788886-001-A	1
32	Second Side Cover R	136-788887-002-A	1
33	Nut Washer	136-789407-A	2
201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0*	6
202	Screw, SL-CPIMSx3x10x15BF	805-310003-010-0*	2
203	Screw, PL-CPIMSx3x8x15BF	805-300003-008-0*	2
204	Screw, PL-CPIMSx4x8x15BF	805-300004-008-0*	2
205	E Ring (E-32)	803-010030-032-0*	3
206	E Ring (E-30)	803-814783-030-0*	2
207	E Ring (E-40)	803-010030-040-0*	1

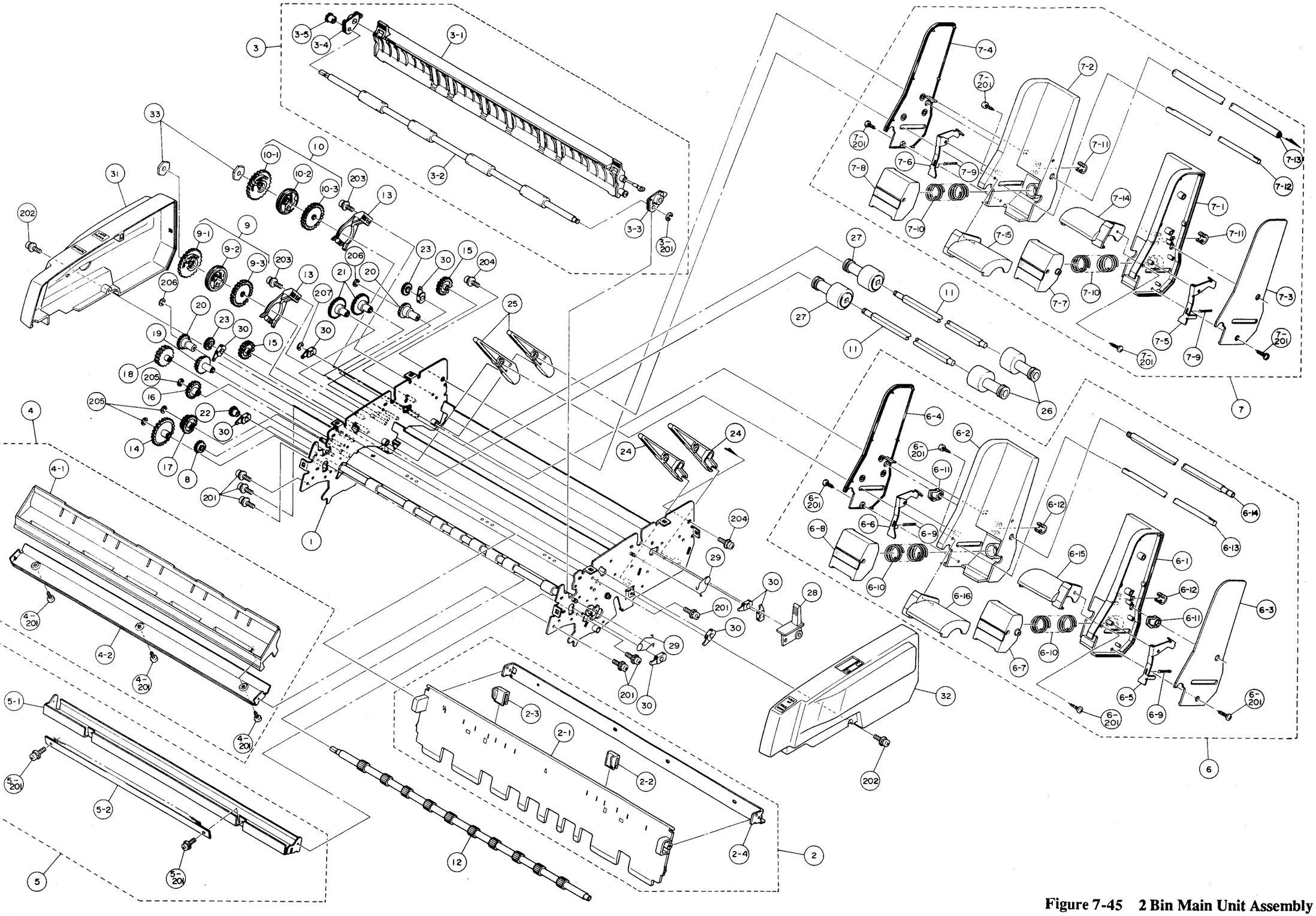
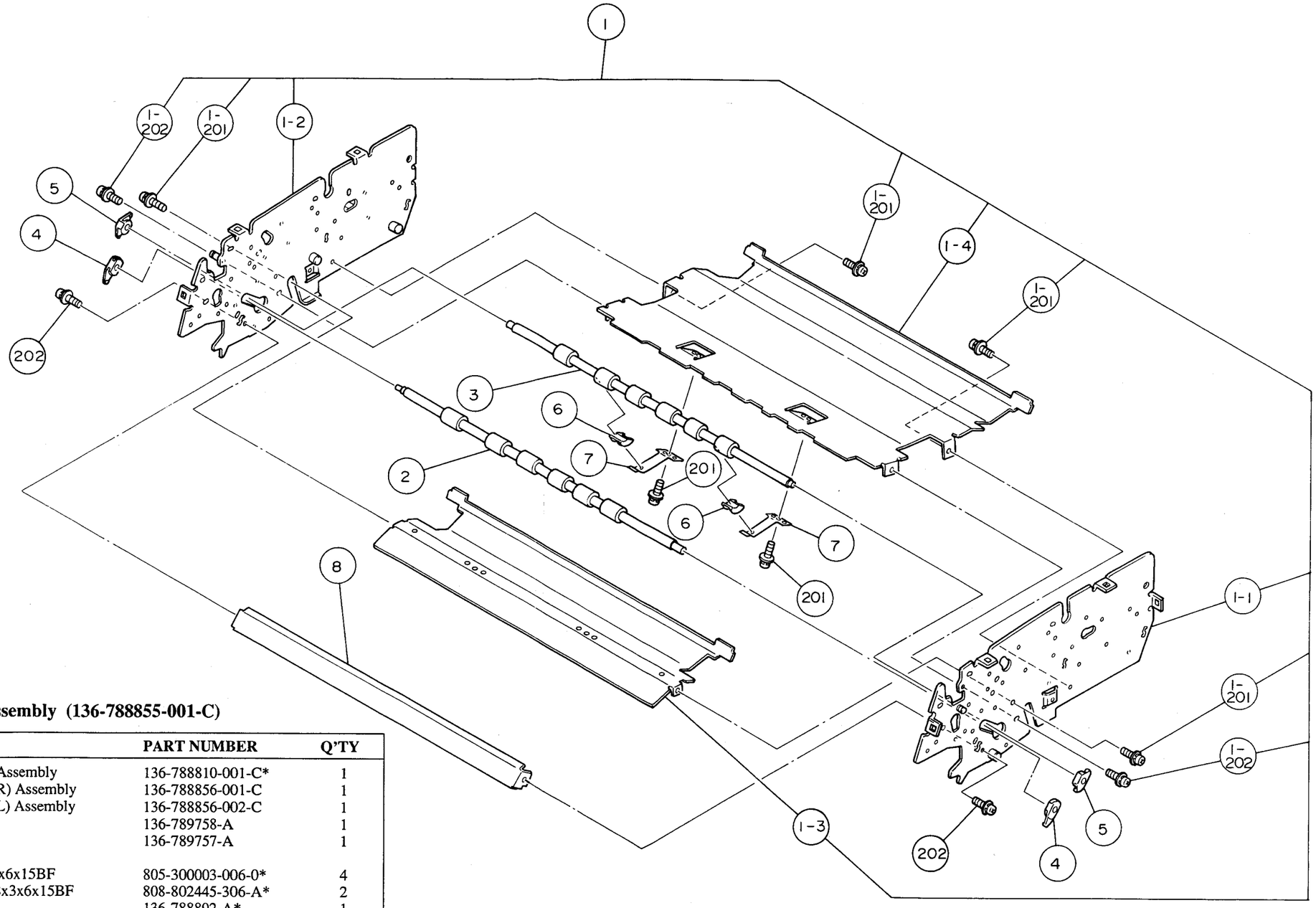


Figure 7-45 2 Bin Main Unit Assembly

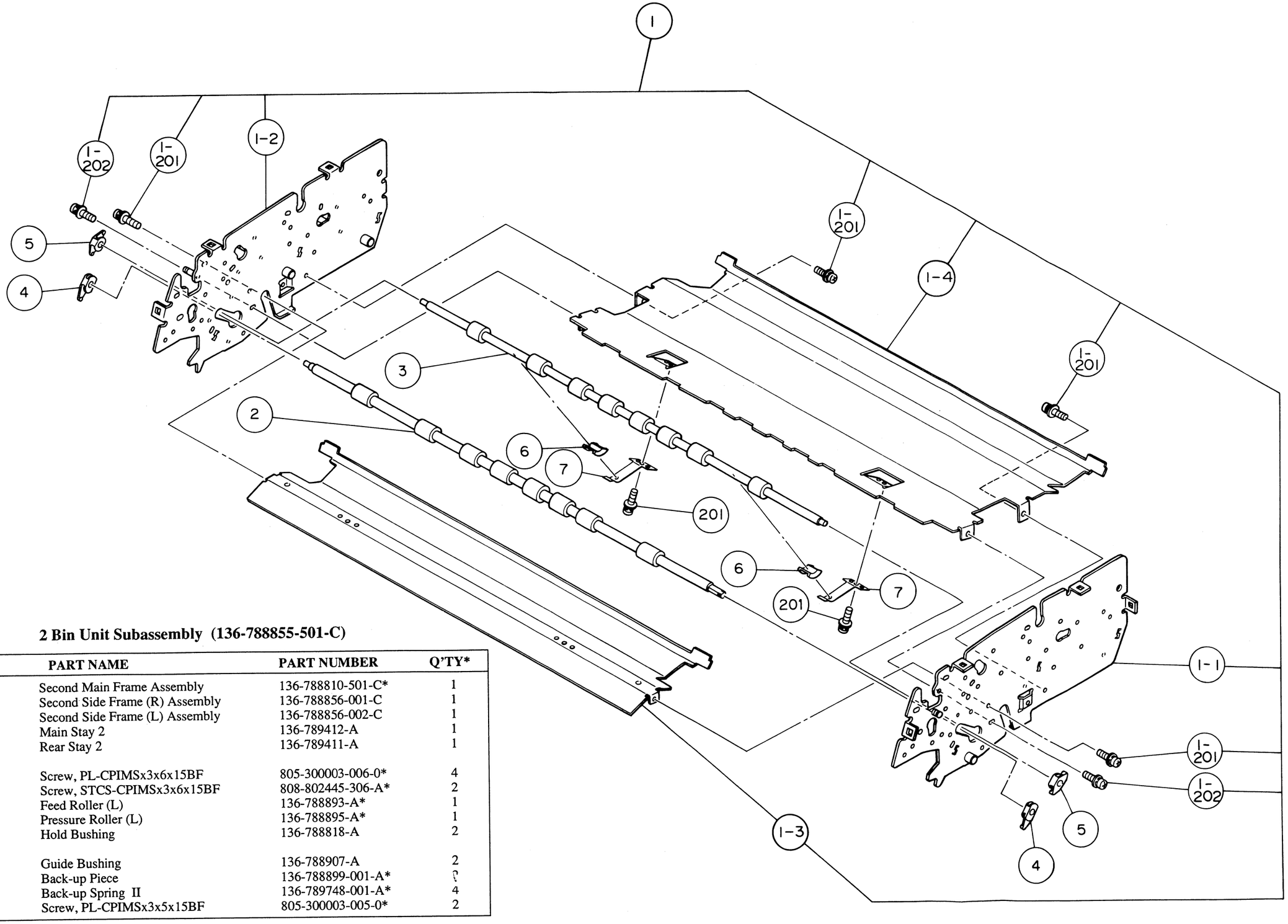


2 Bin Unit Subassembly (136-788855-001-C)

ITEM	PART NAME	PART NUMBER	Q'TY
1	Second Main Frame Assembly	136-788810-001-C*	1
1-1	Second Side Frame (R) Assembly	136-788856-001-C	1
1-2	Second Side Frame (L) Assembly	136-788856-002-C	1
1-3	Main Stay 2 (S)	136-789758-A	1
1-4	Rear Stay 2 (S)	136-789757-A	1
1-201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0*	4
1-202	Screw, STCS-CPIMSx3x6x15BF	808-802445-306-A*	2
2	Feed Roller (S)	136-788892-A*	1
3	Pressure Roller (S)	136-788894-A*	1
4	Hold Bushing	136-788818-A	2
5	Guide Bushing	136-788907-A	2
6	6 Back-up Piece	136-788899-001-A*	2
7	Back-up Spring II	136-789748-001-A*	4
8	Guide Stay (S)	136-789762-001-A	1
201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0*	2
202	Screw, STCS-CPIMSx3x6x15BF	808-802445-306-A*	2

* Not available as a spare part.

Figure 7-46 2 Bin Unit Subassembly



2 Bin Unit Subassembly (136-788855-501-C)

ITEM	PART NAME	PART NUMBER	Q'TY*
1	Second Main Frame Assembly	136-788810-501-C*	1
1-1	Second Side Frame (R) Assembly	136-788856-001-C	1
1-2	Second Side Frame (L) Assembly	136-788856-002-C	1
1-3	Main Stay 2	136-789412-A	1
1-4	Rear Stay 2	136-789411-A	1
1-201	Screw, PL-CPIMSx3x6x15BF	805-300003-006-0*	4
1-202	Screw, STCS-CPIMSx3x6x15BF	808-802445-306-A*	2
2	Feed Roller (L)	136-788893-A*	1
3	Pressure Roller (L)	136-788895-A*	1
4	Hold Bushing	136-788818-A	2
5	Guide Bushing	136-788907-A	2
6	Back-up Piece	136-788899-001-A*	2
7	Back-up Spring II	136-789748-001-A*	4
201	Screw, PL-CPIMSx3x5x15BF	805-300003-005-0*	2

* Not available as a spare part.

Figure 7-47 2 Bin Unit Subassembly

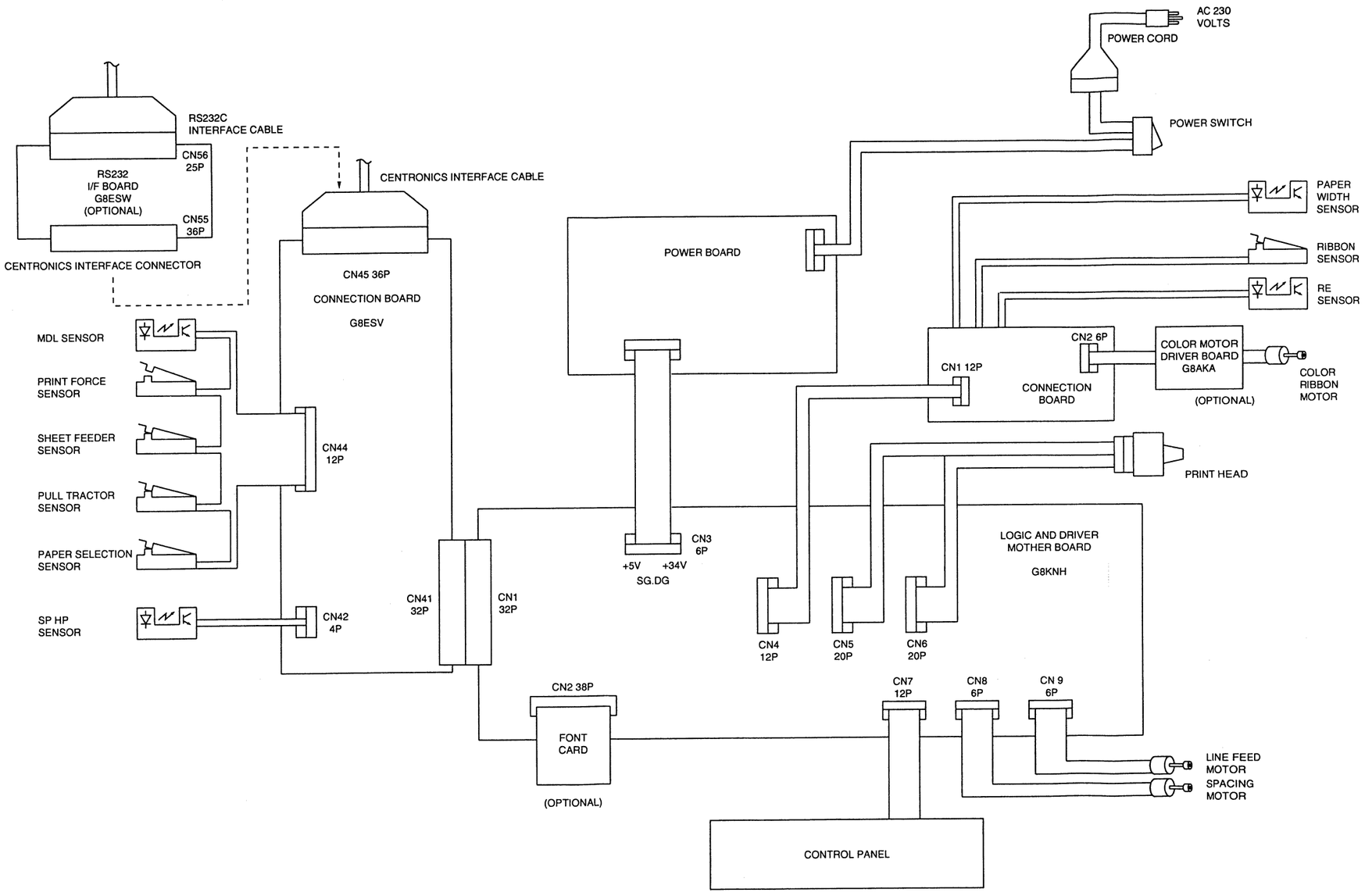


Figure 8-1 Interconnection Circuit Diagram

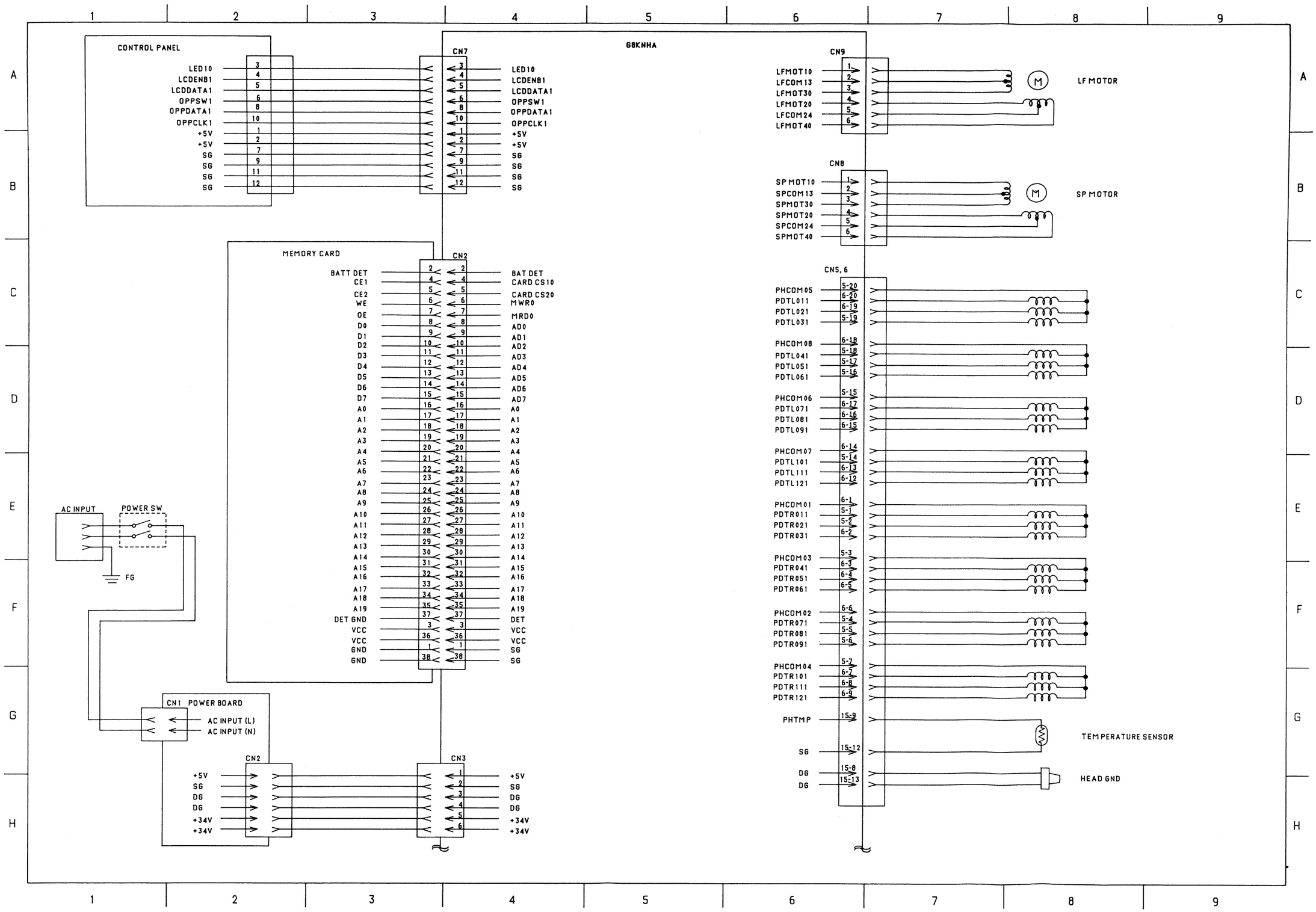


Figure 8-2 Connector Wiring Diagram I

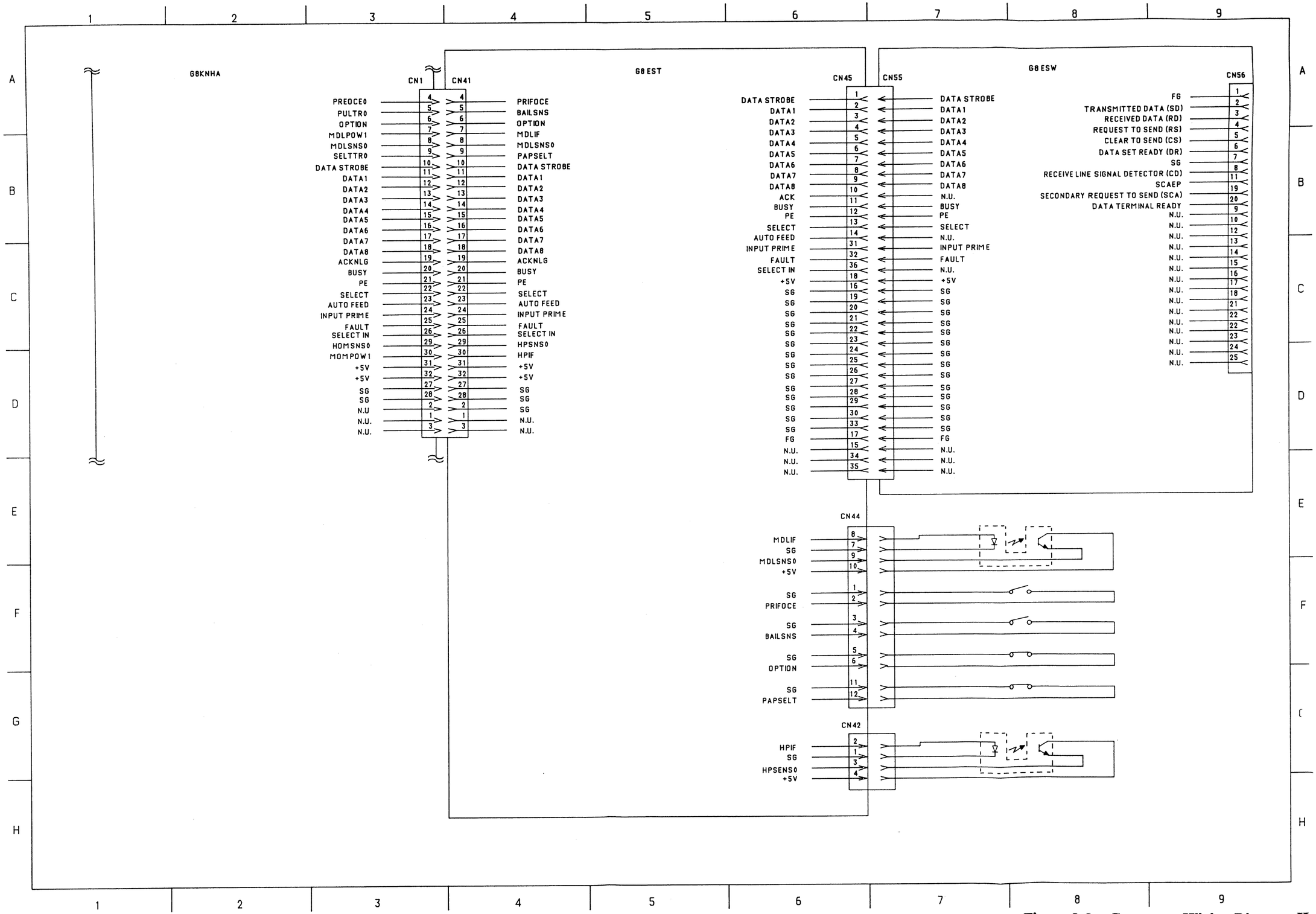


Figure 8-3 Connector Wiring Diagram II

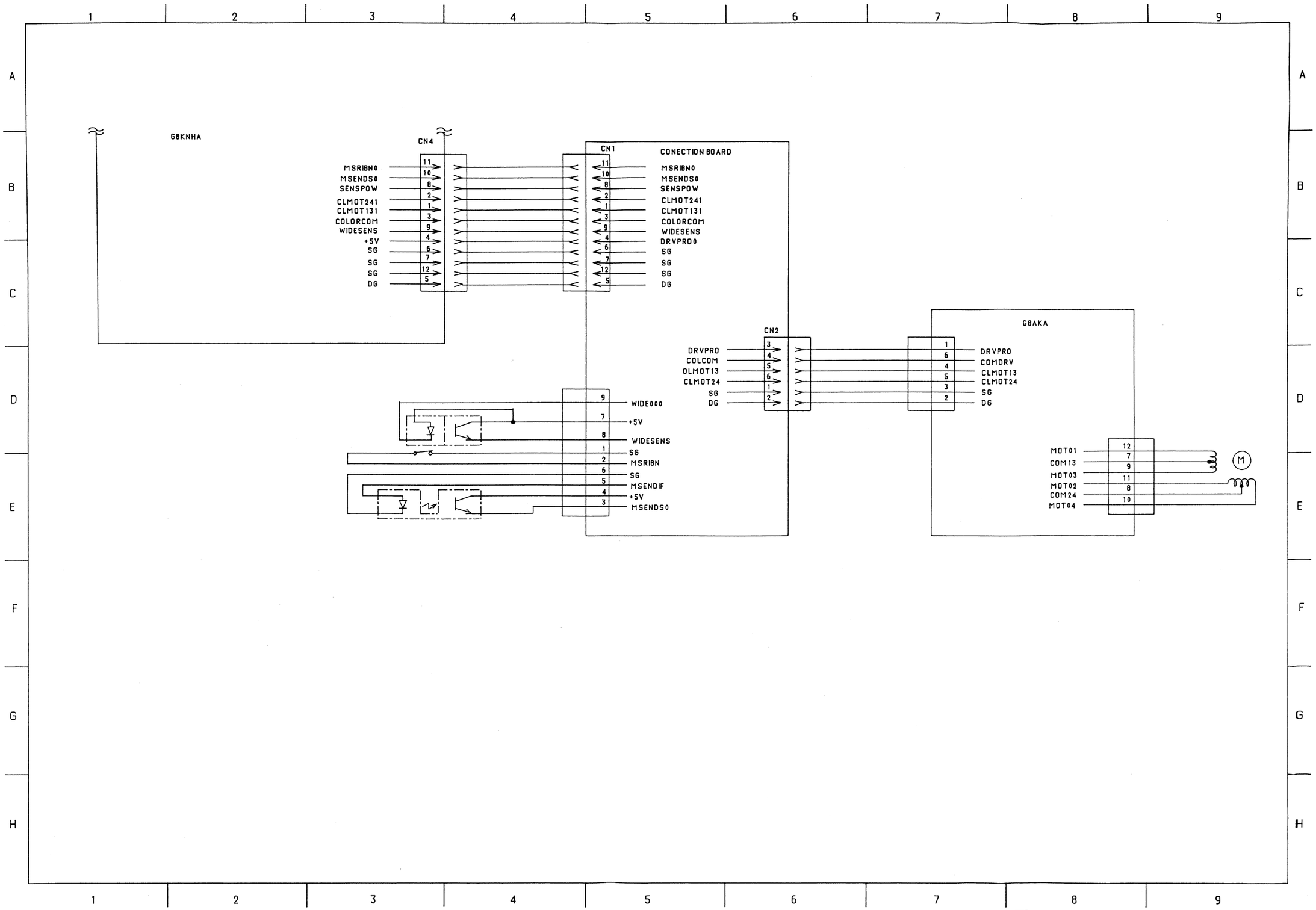


Figure 8-4 Connector Wiring Diagram III

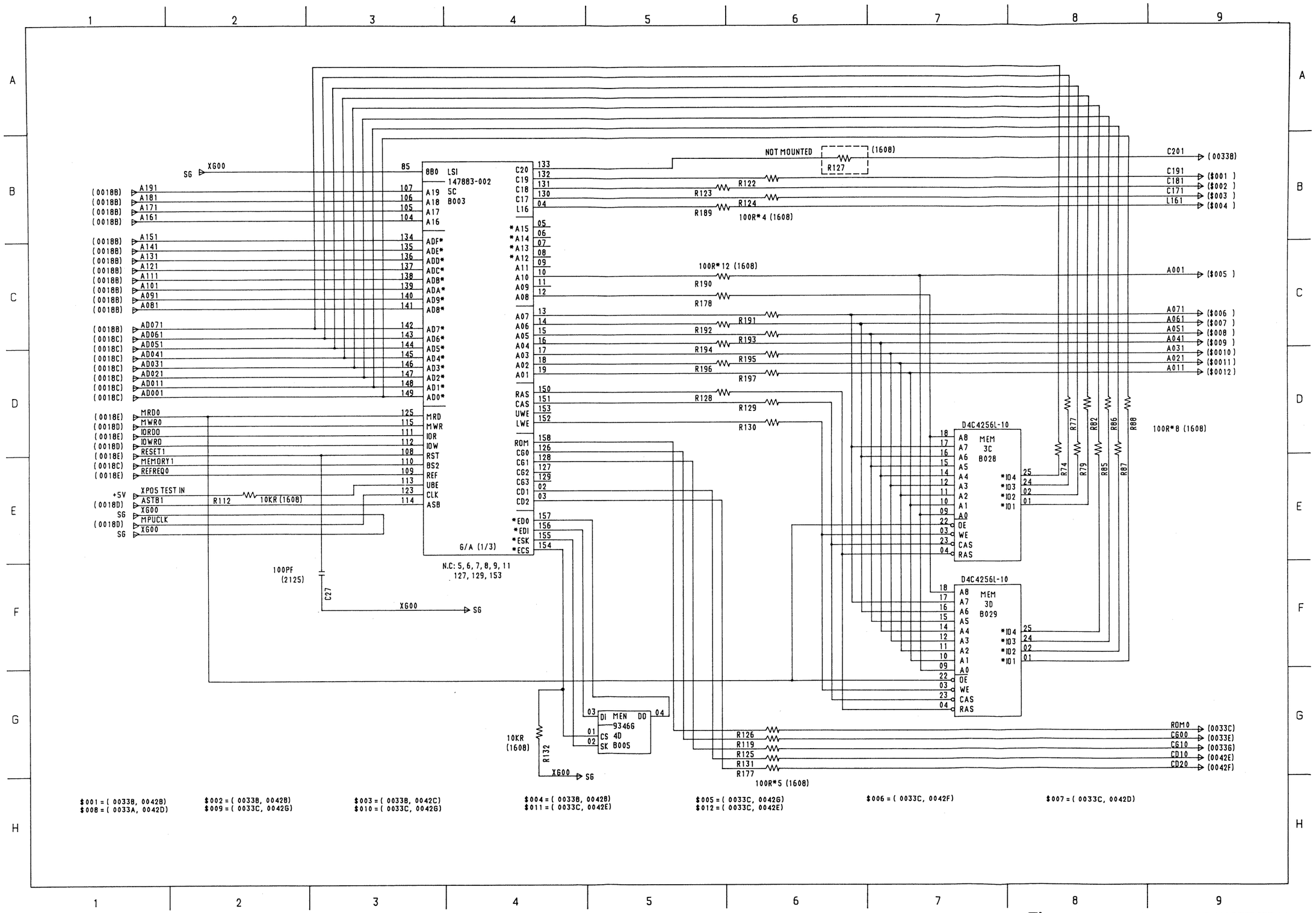


Figure 8-6 Mother Board (G8KNHA) Circuit Diagram – 2 of 12

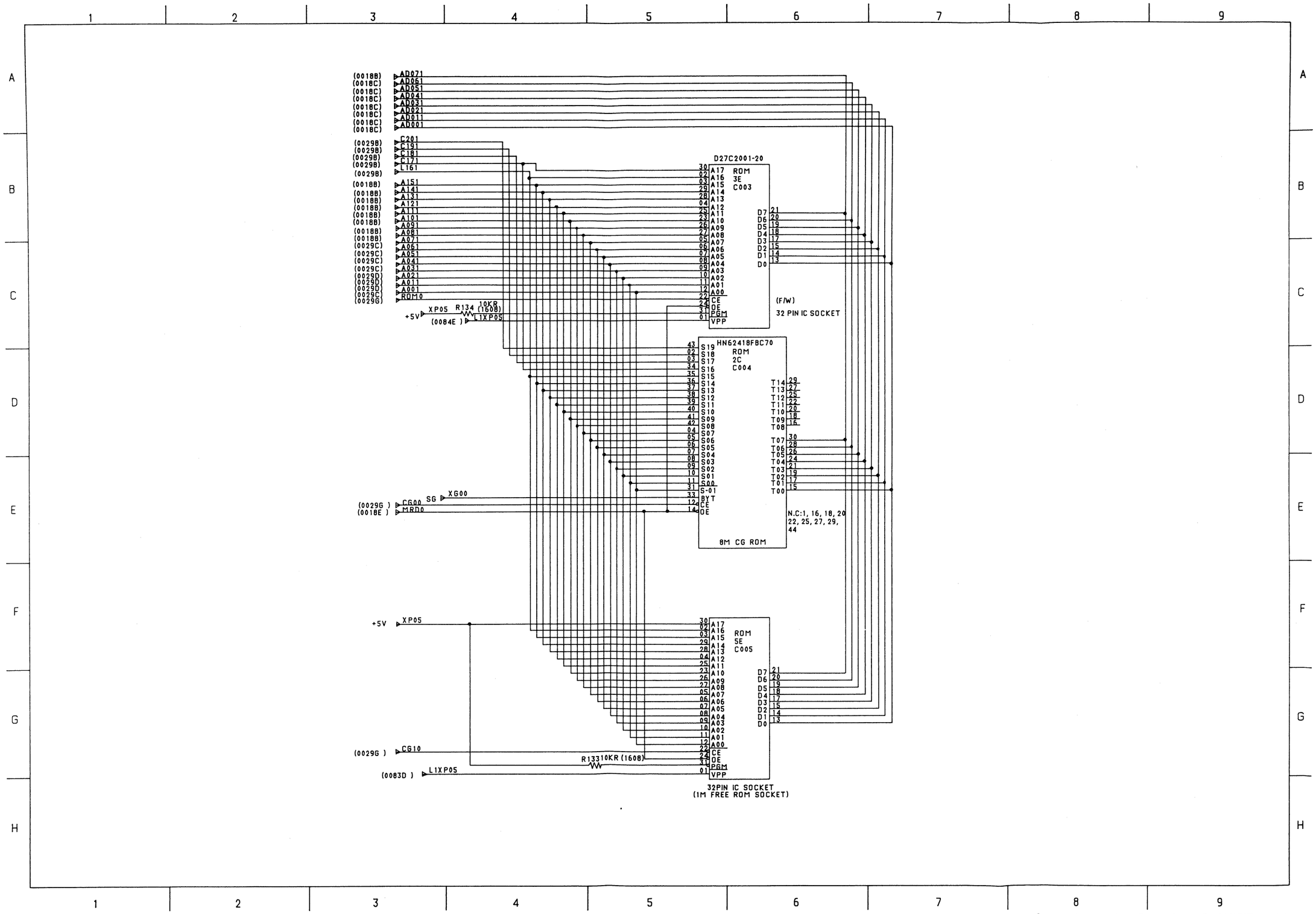


Figure 8-7 Mother Board (G8KNHA) Circuit Diagram – 3 of 12

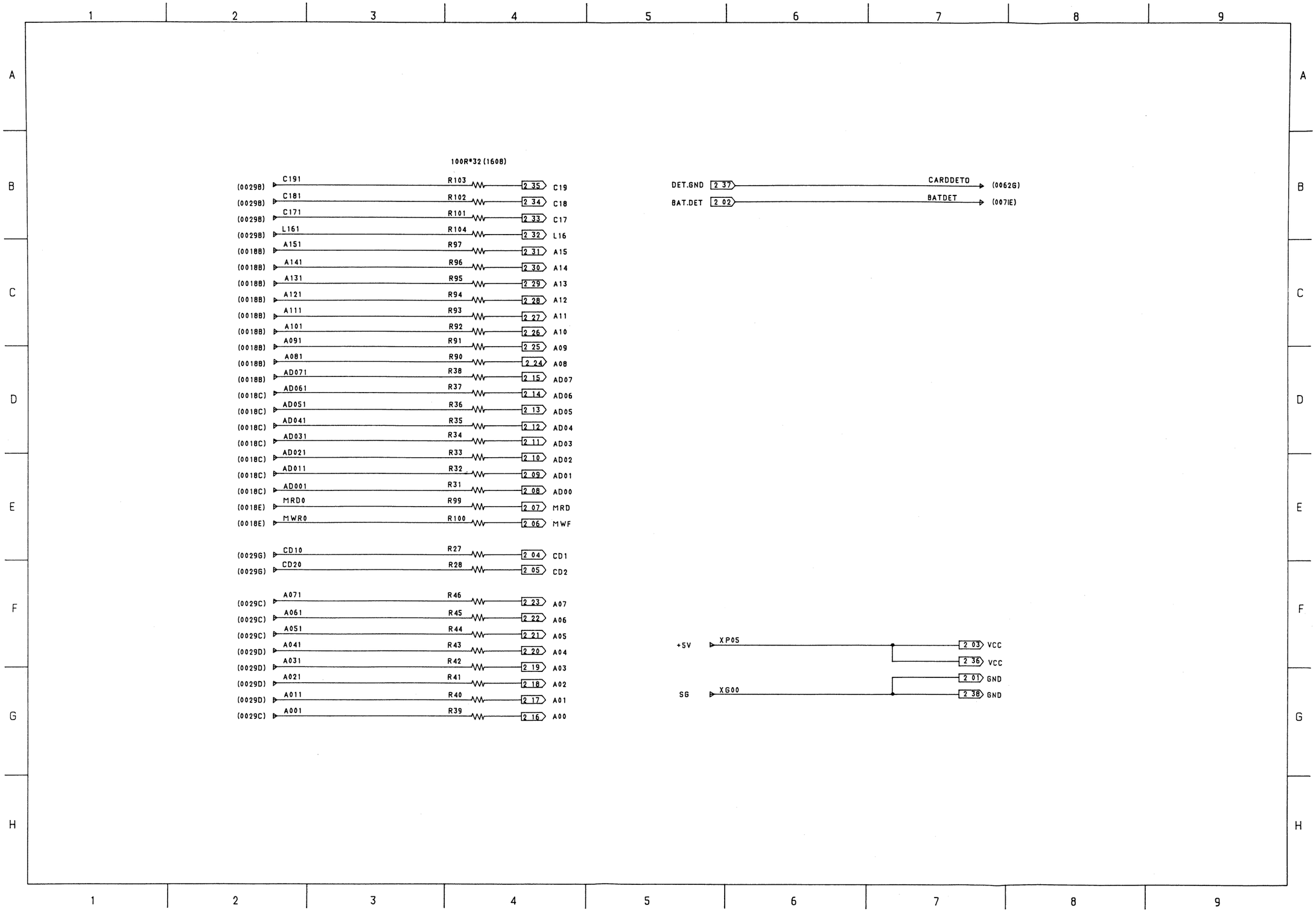


Figure 8-8 Mother Board (G8KNHA) Circuit Diagram – 4 of 12

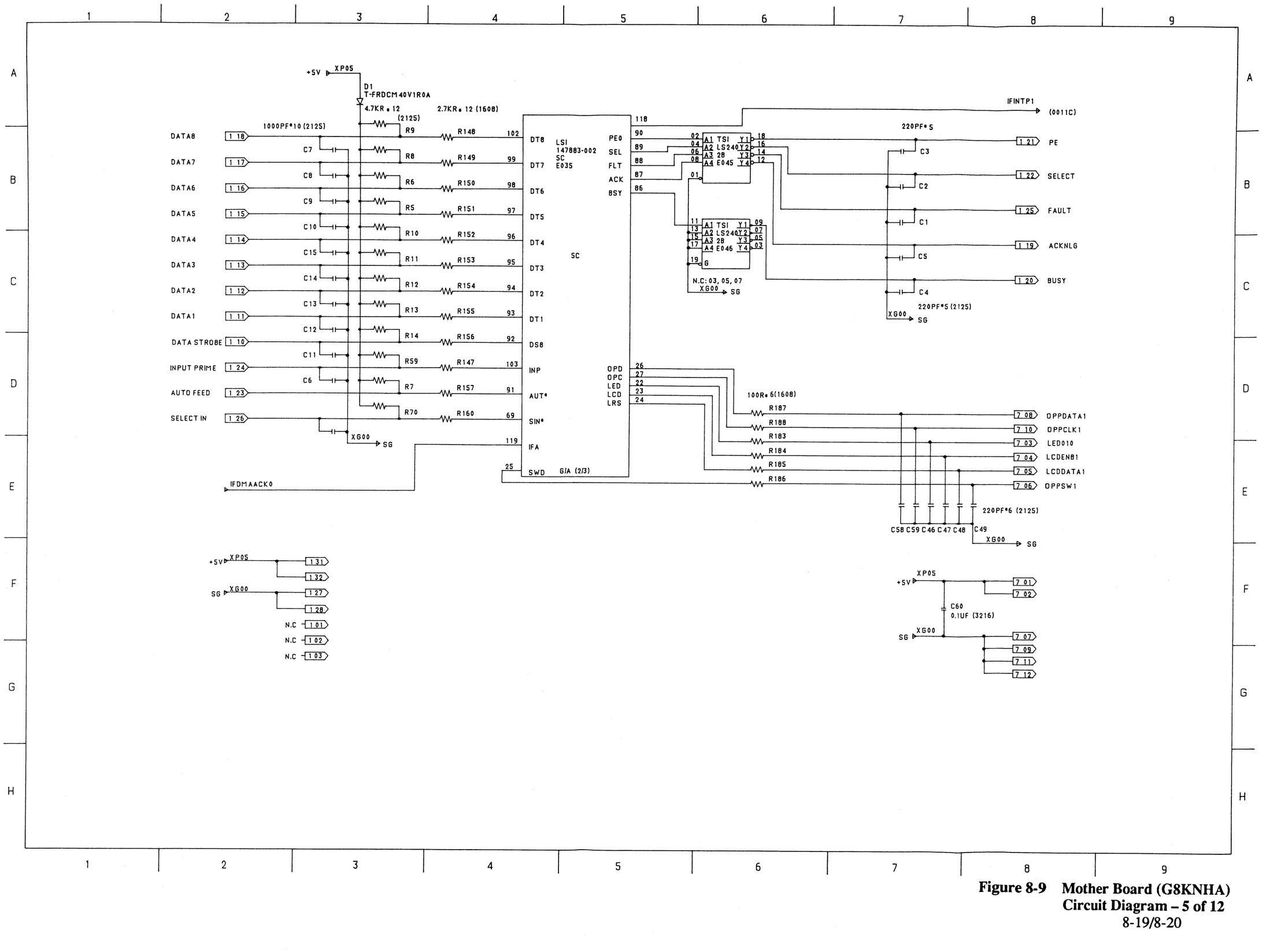


Figure 8-9 Mother Board (G8KNHA) Circuit Diagram – 5 of 12

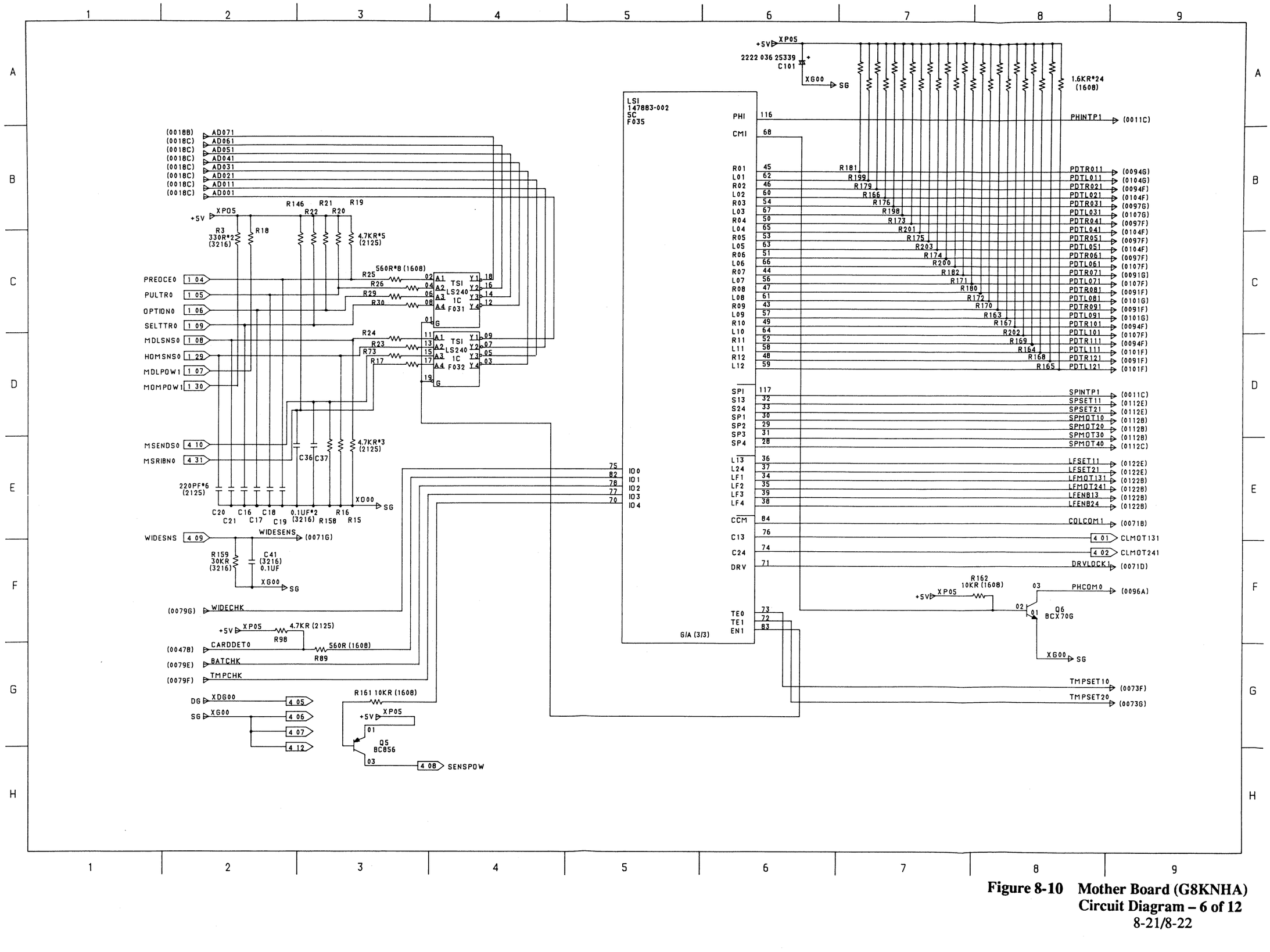


Figure 8-10 Mother Board (G8KNHA) Circuit Diagram – 6 of 12

8-21/8-22

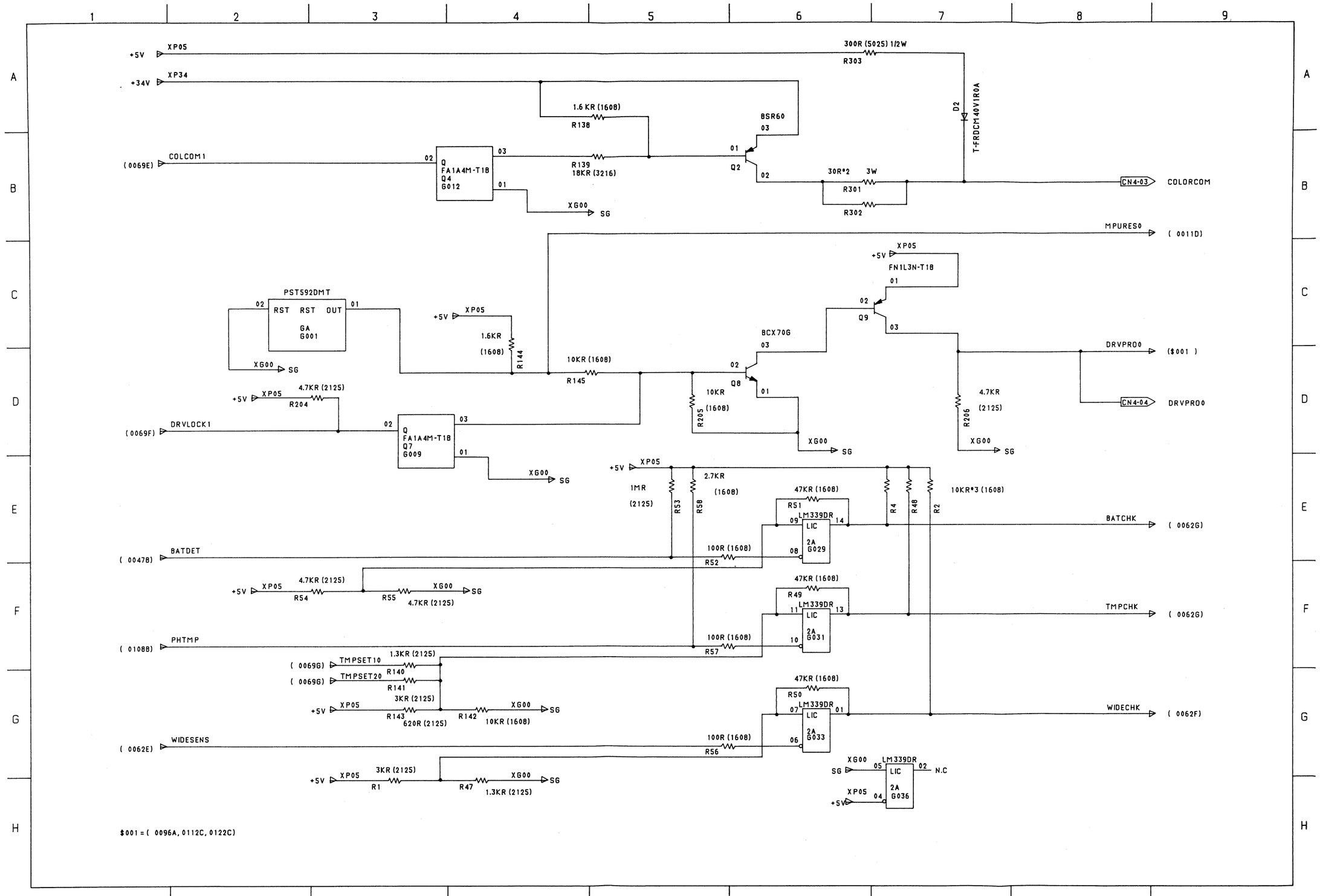


Figure 8-11 Mother Board (G8KNHA) Circuit Diagram – 7 of 12

8-23/8-24

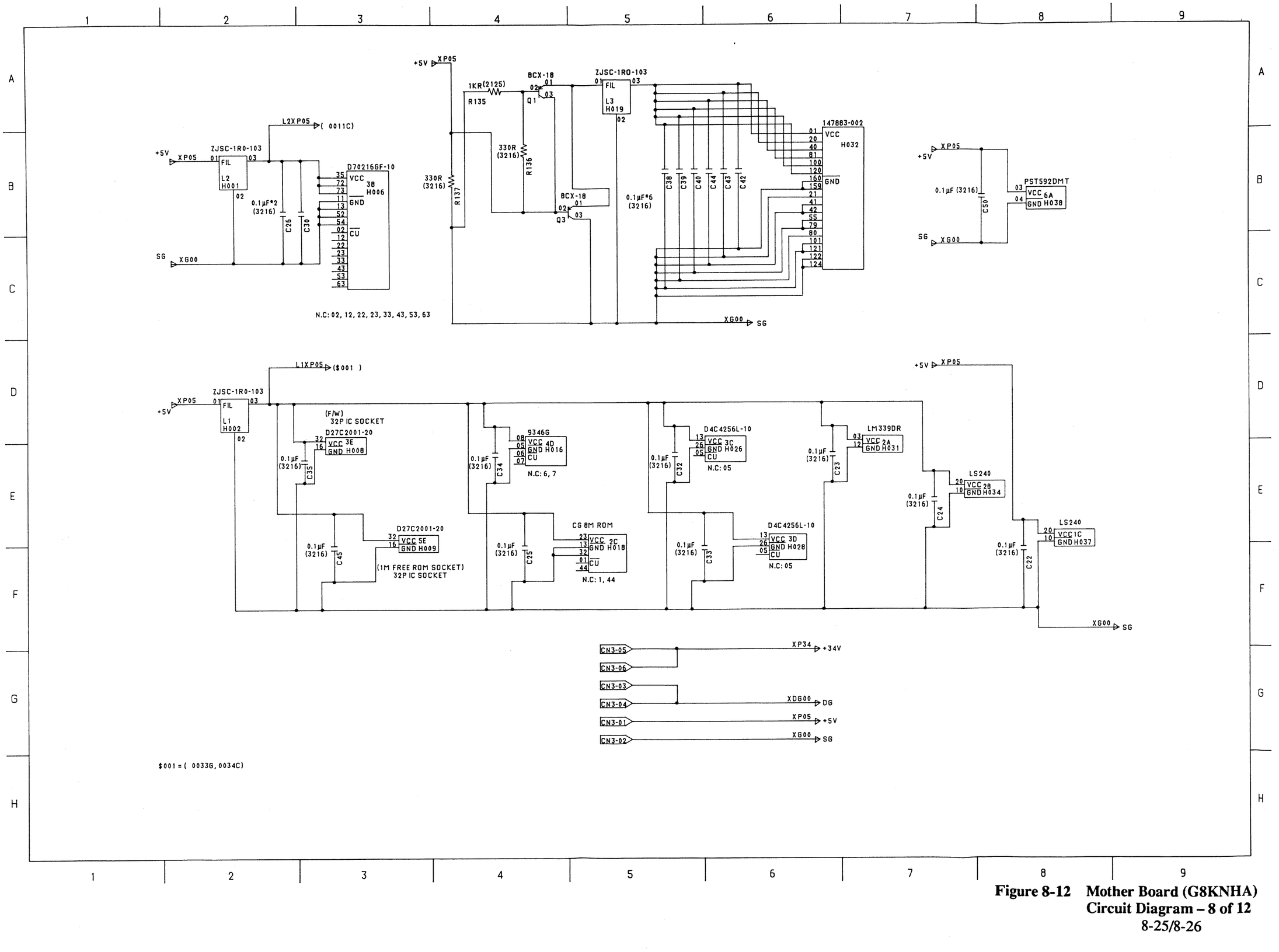


Figure 8-12 Mother Board (G8KNHA) Circuit Diagram – 8 of 12

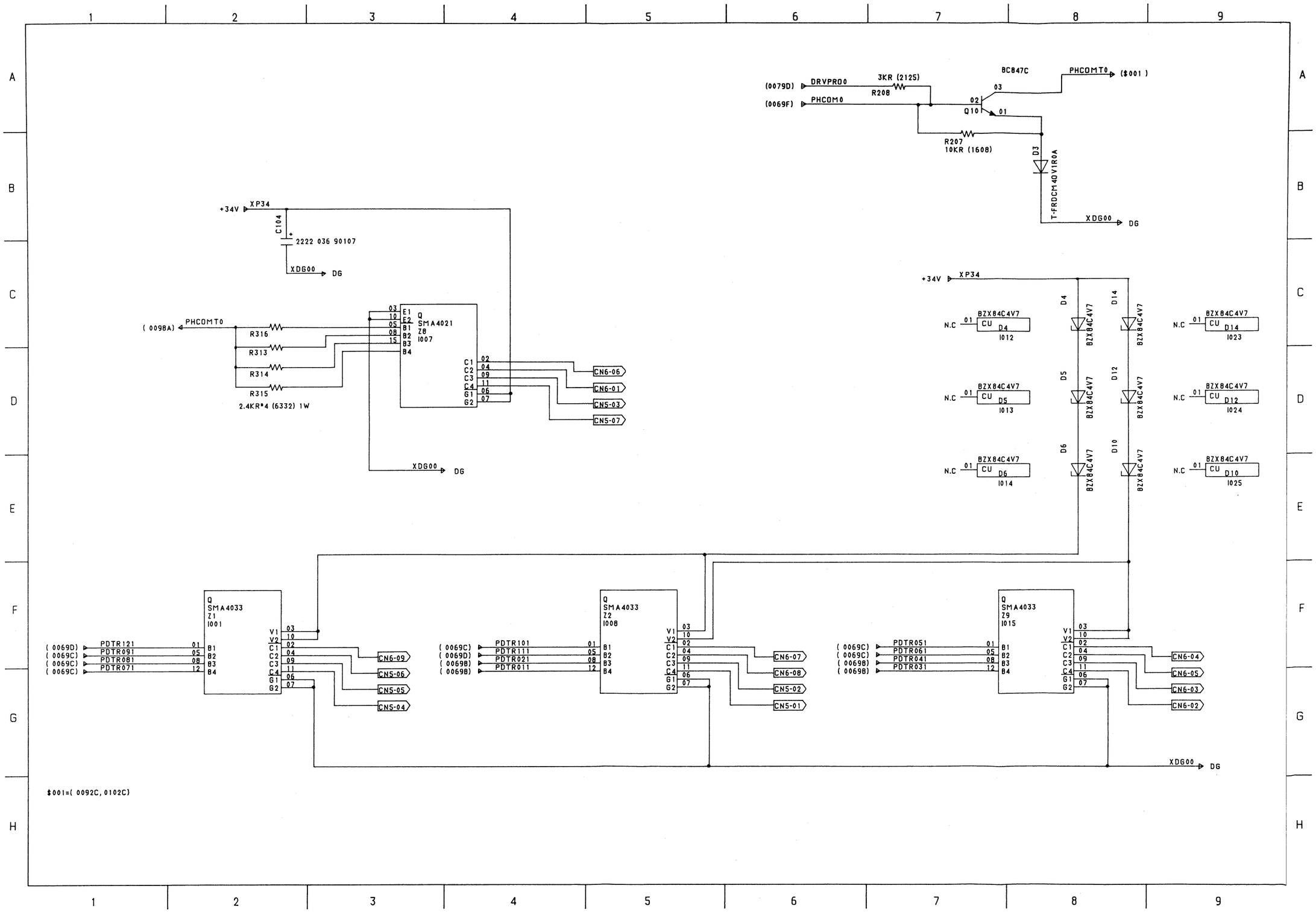


Figure 8-13 Mother Board (G8KNHA) Circuit Diagram – 9 of 12

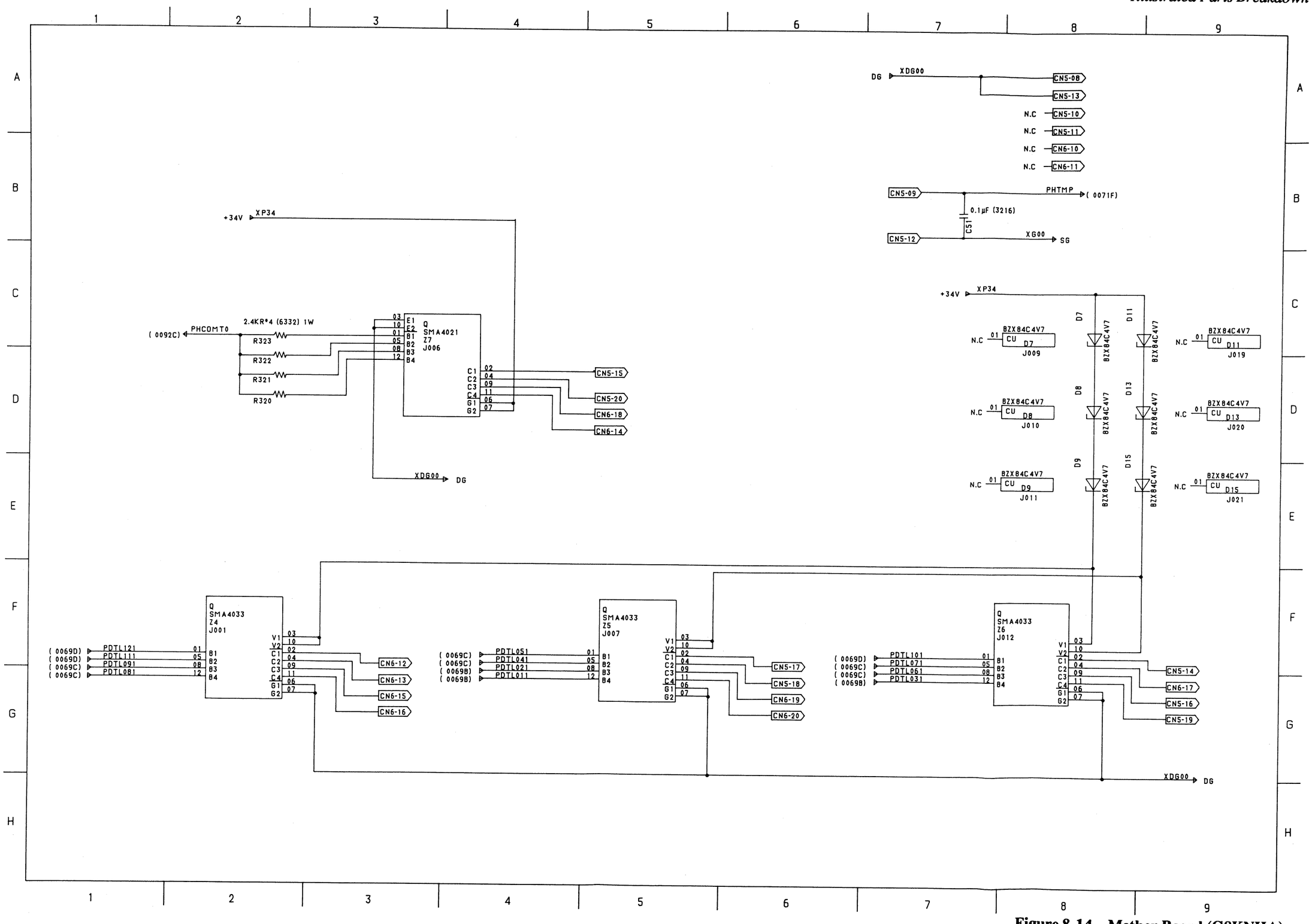


Figure 8-14 Mother Board (G8KNHA) Circuit Diagram – 10 of 12

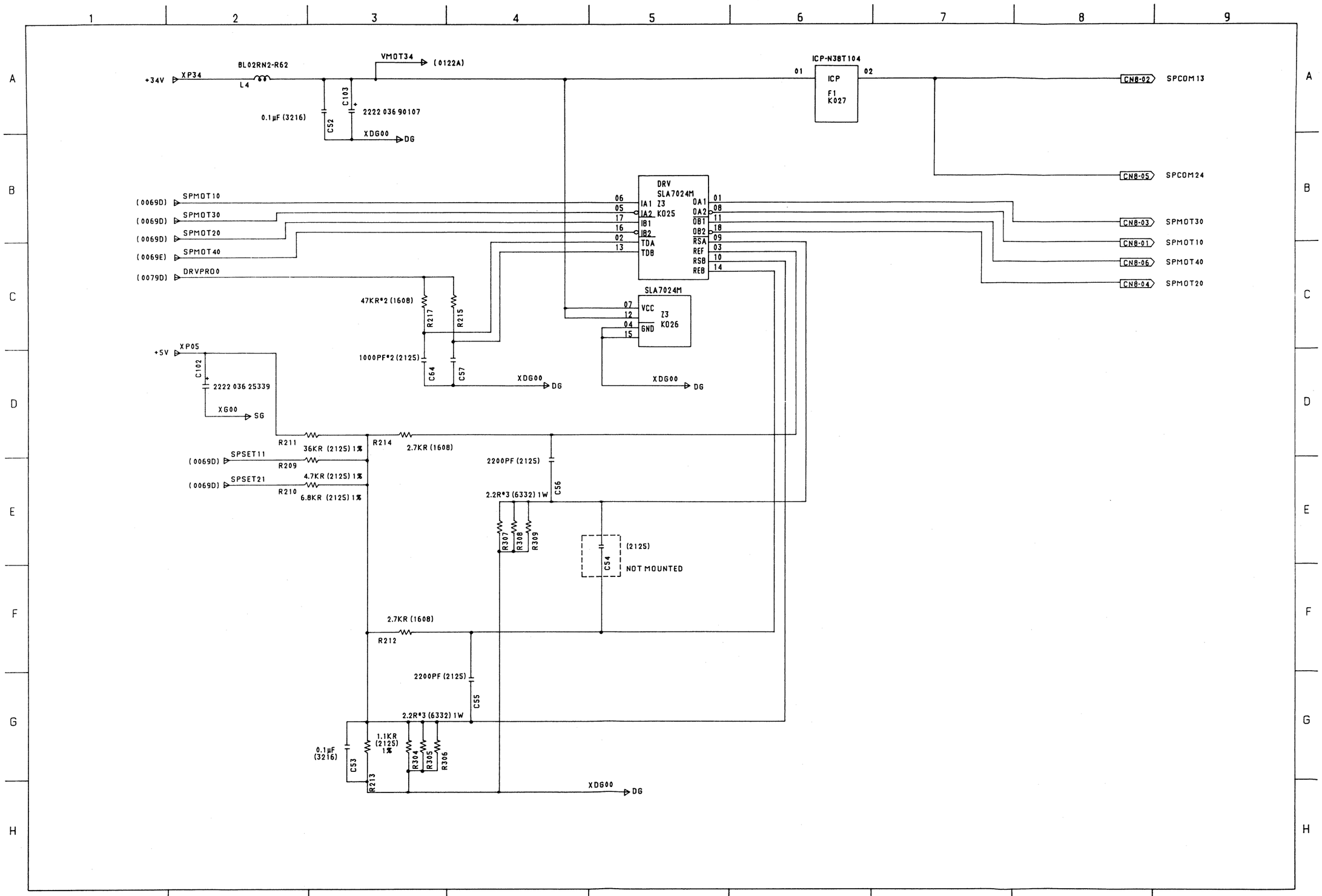


Figure 8-15 Mother Board (G8KNHA) Circuit Diagram – 11 of 12

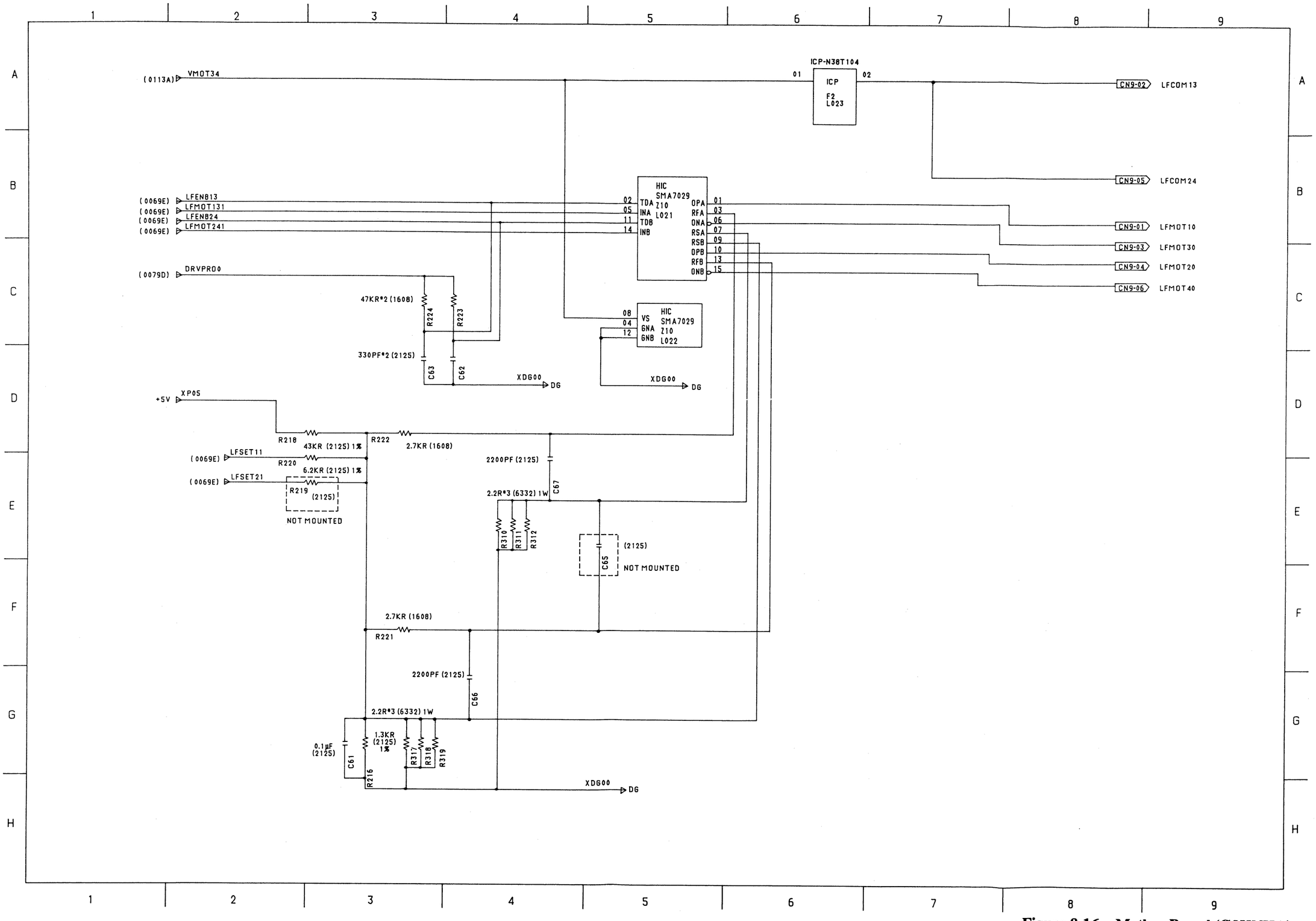


Figure 8-16 Mother Board (G8KNHA) Circuit Diagram – 12 of 12

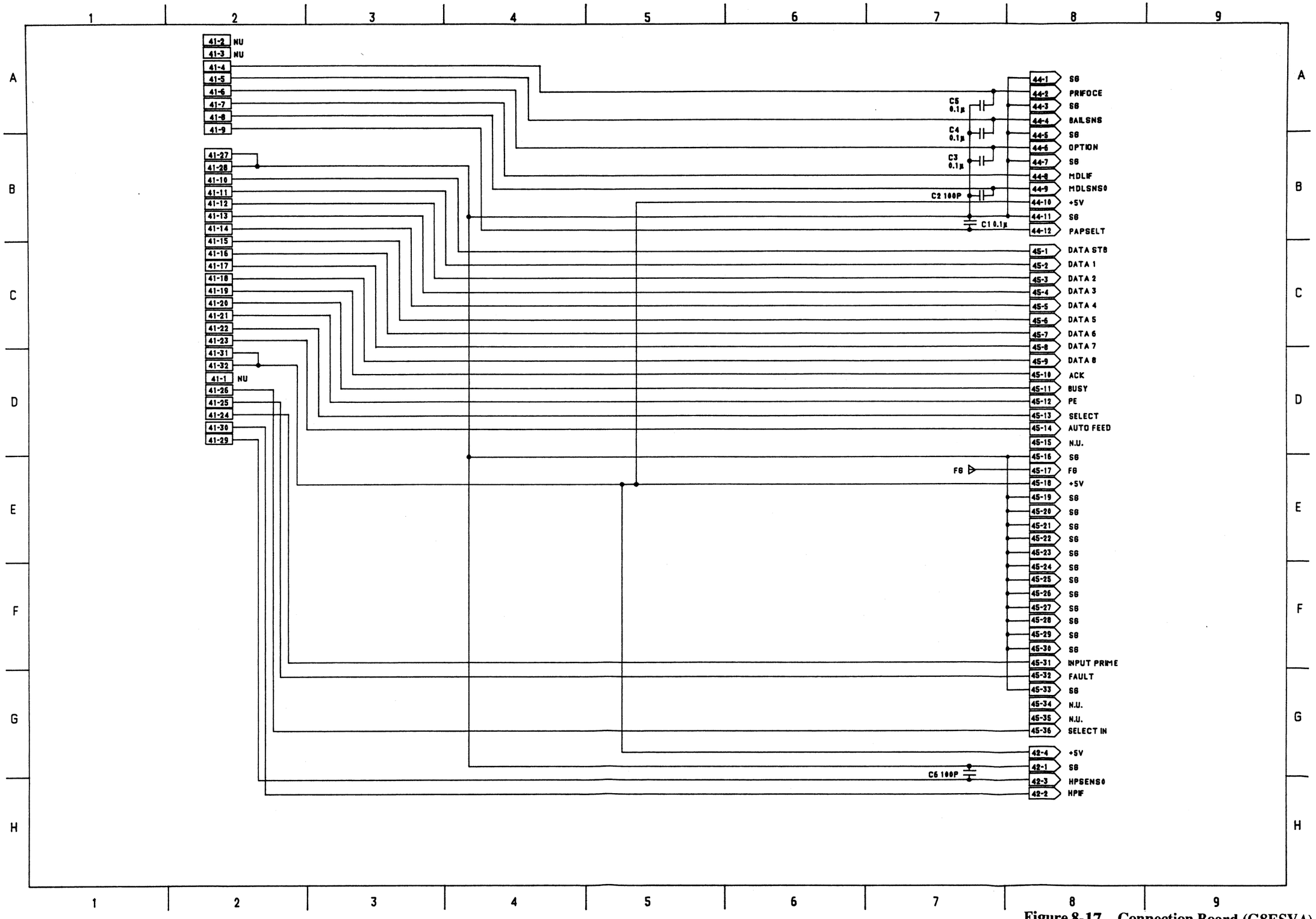


Figure 8-17 Connection Board (G8ESVA) Circuit Diagram

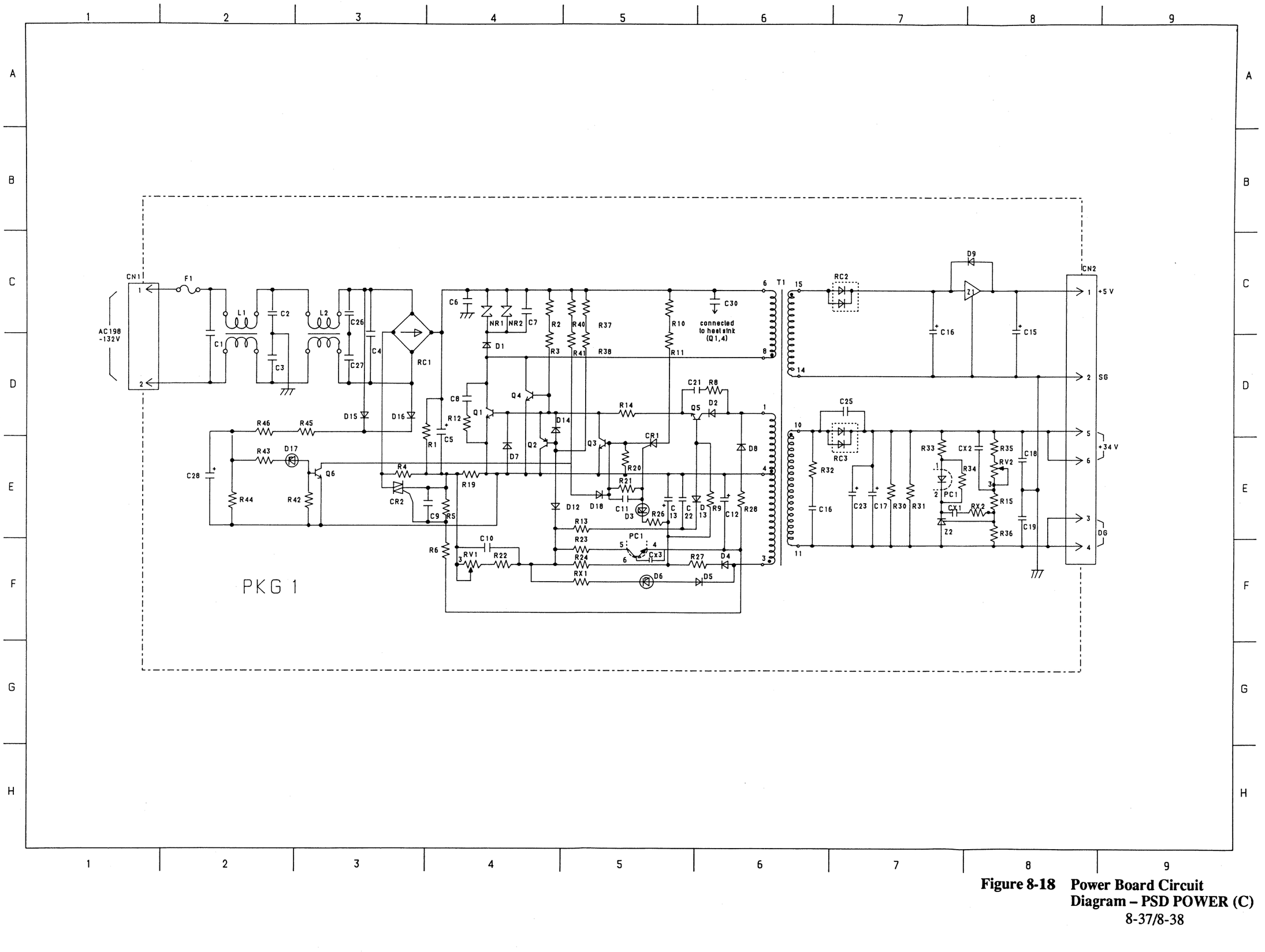


Figure 8-18 Power Board Circuit Diagram – PSD POWER (C)

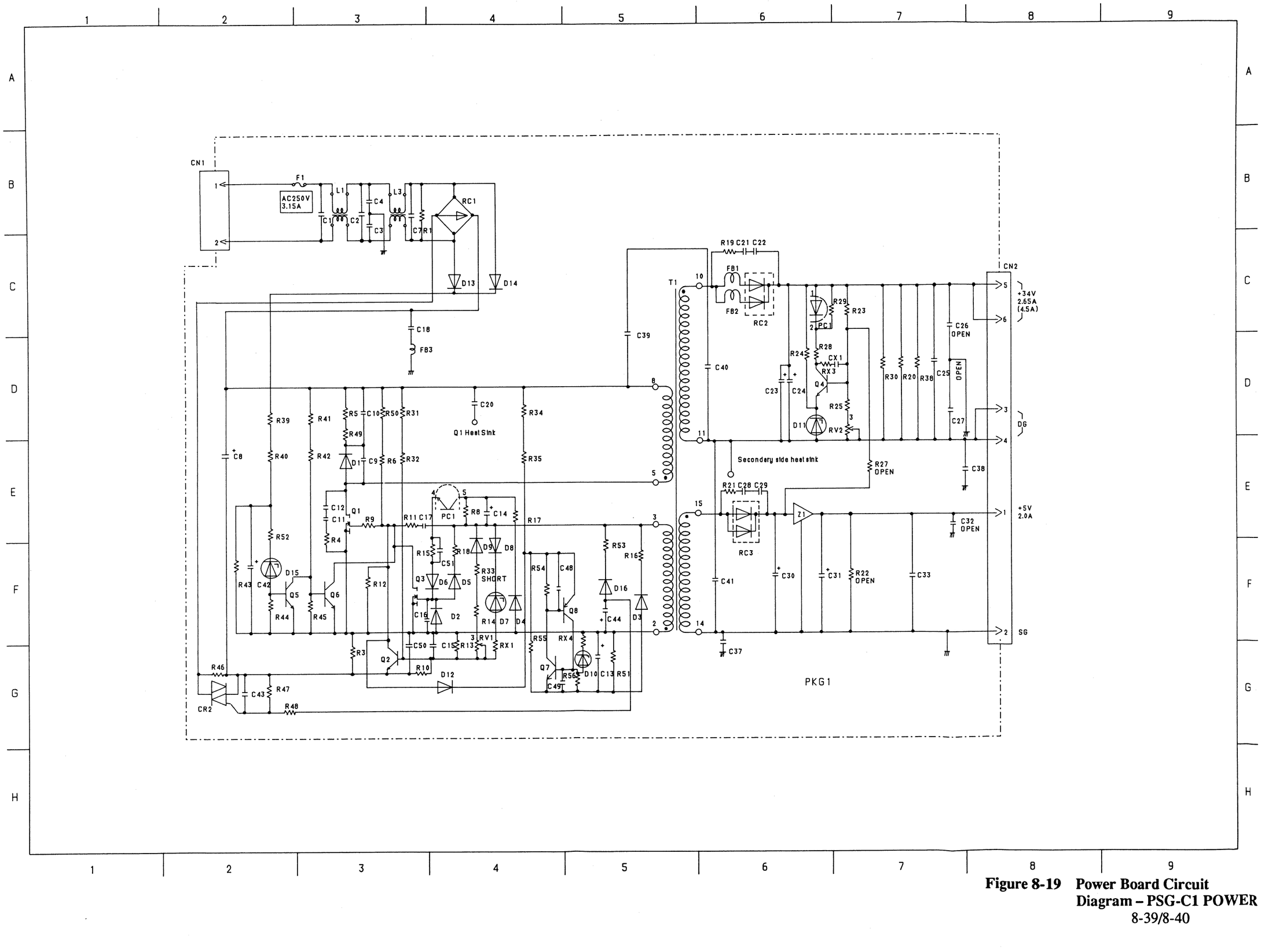


Figure 8-19 Power Board Circuit Diagram – PSG-C1 POWER

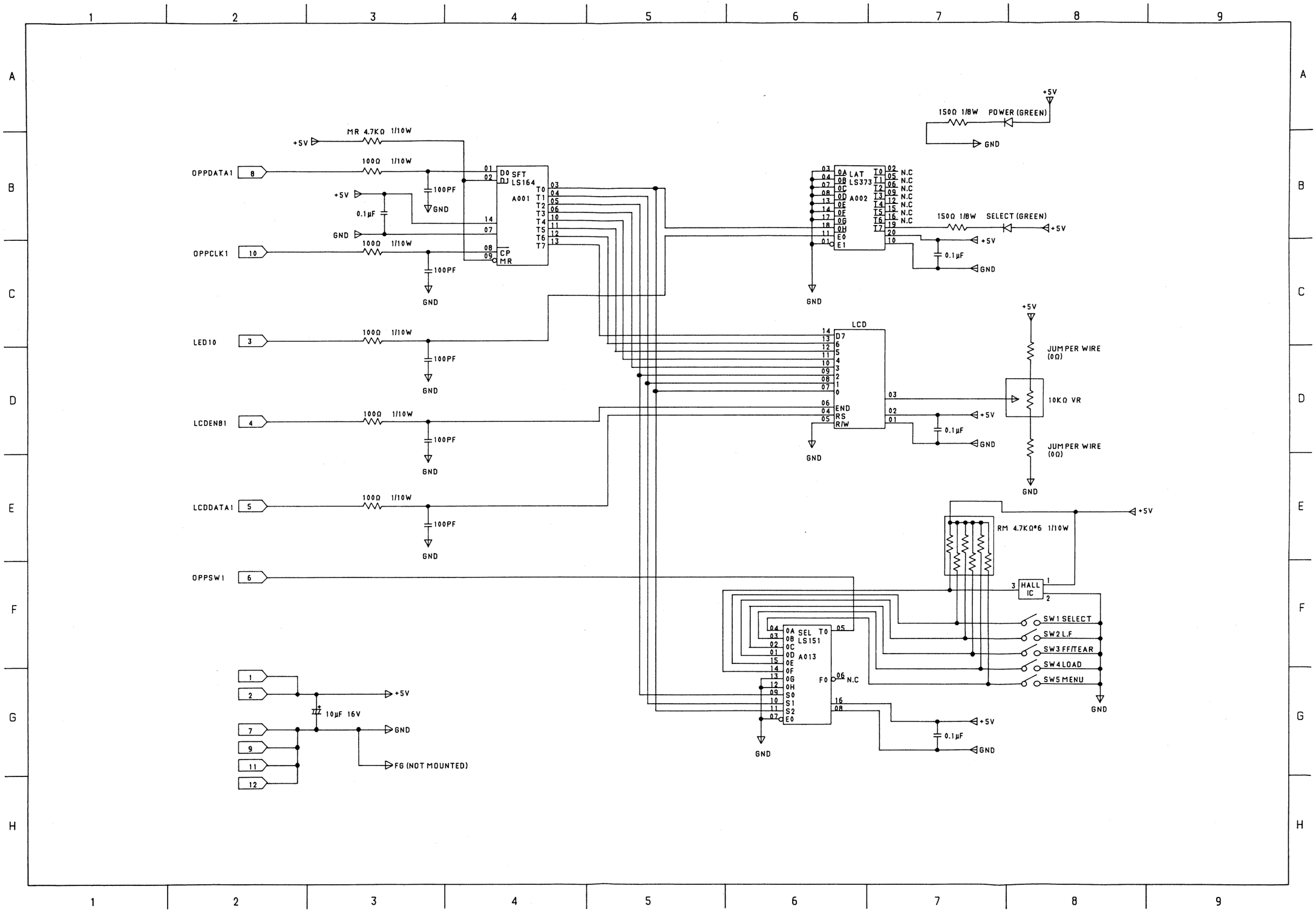


Figure 8-20 Control Panel Circuit Diagram

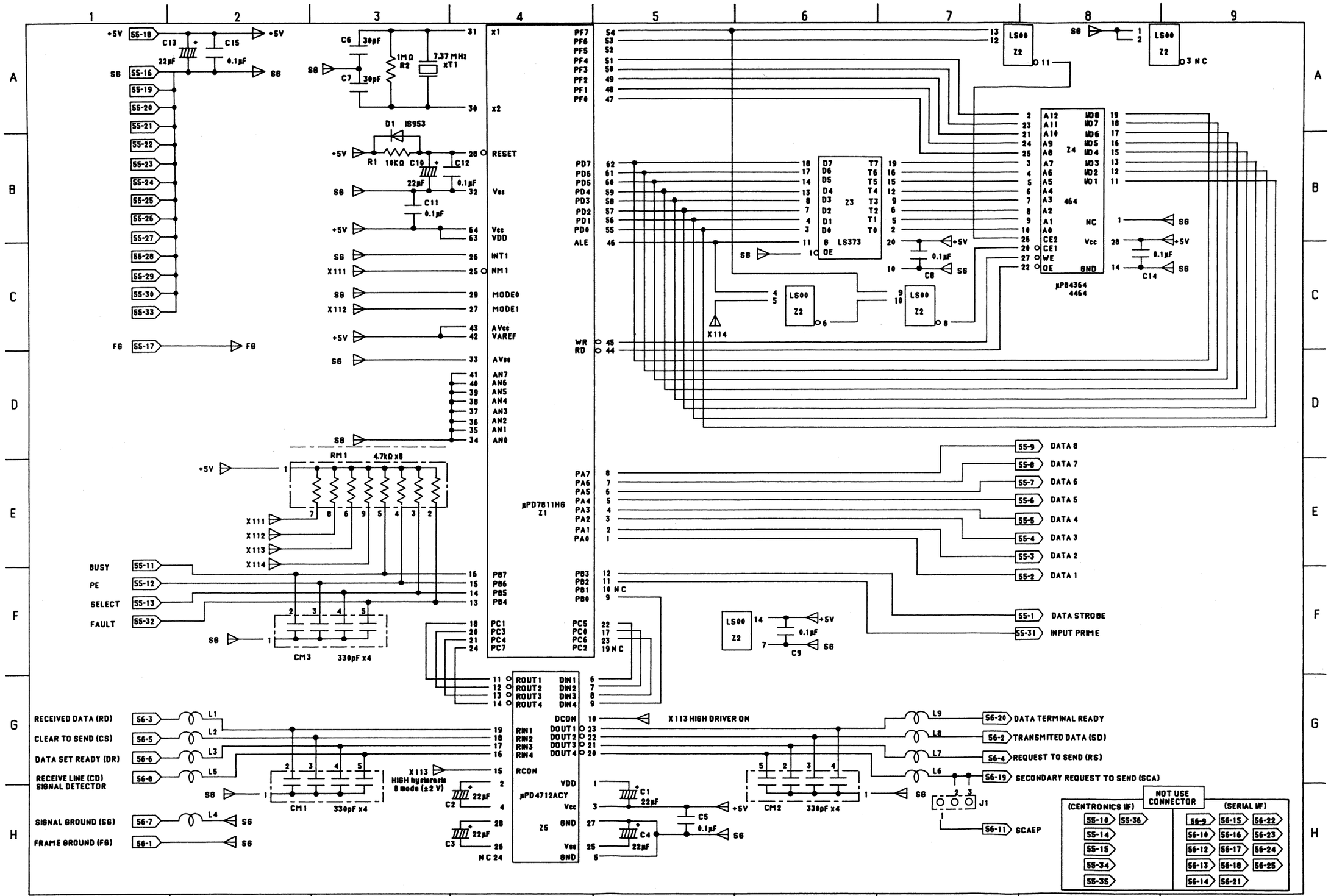
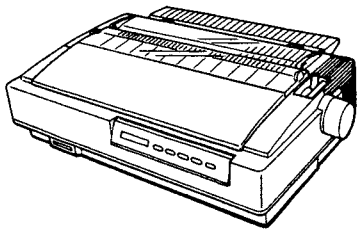


Figure 8-21 Serial Interface Board (G8ESW) Circuit Diagram

Section 8

Diagrams



Figures 8-1 through 8-21 contain cabling diagrams for the P62/P72 printers. These diagrams can be used when troubleshooting any potential problem with these printers.